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Unto the Children

A STORY OF THE REDWOODS

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Unto the Children

A STORY OF THE REDWOODS

BY AUSTIN HALL

San Jose, California

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The Semperviren's Club of California

by the Author

For the Sequoias, Sempervirens and Gigantea, for the trees of the earth, for the great outdoors and all that makes life worth living.

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In grateful memory of the
"Forest Man,"
ANDREW P. HILL,
this book is dedicated

253405

Unto the Children

The Majestic Redwoods Live Again in These Appealing Chapters from the Life of Uncle Jim Bascom

HEN Jim Bascom, robust and thirty, passed through the Santa Clara Valley in the year 1867, he gave but cursory attention to the bare, swept plain that then bordered San Francisco Bay on the south. There were mountains to the westward; and Jim was always interested in mountains. The buckboard rustled through the dust with the man and his seven-year-old daughter perched on the scant seat, both of them watching, with straining eyes, the blue haze in the distance.

The man held his whip and pointed. "Over there is where they are, Bessie—the big trees and the mountains that look down at the ocean."

The girl hung onto the irons; in her eyes there was more blue than there is in all the distance; and back of the blue were the wonderful dreams of childhood. The big trees were soon to be—the trees that, for months, had been the sole subject of her father's conversation.

They had started a year before, when Jim Bascom, a widowed lumberman of Vermont, had harkened to a returned miner, who spoke contemptuously of the Vermont woods, and told of a forest whose trees were immense beyond calculation. Men had laughed at the story; but Jim had listened. He wanted to see those trees, redwoods beyond number; trees of a kind that he had never known, but whose very name seemed synonymous with enchantment. It had not been in the woodsman's nature to resist that call.

At the little village of Los Gatos, Jim drove the horses into the magnificent gorge, where for the first time they caught the scent of the leather-leafed madrona and the crooked manzanita, a place of enchantment, flooded with cadent sounds, rippling waters, and the music of real bells that echoed and rang along the walls in an elfish tintinnabulation; punctuated and undertoned by the rumble of ponderous wheels and creaking brakes. Jim drew up alongside the road just as the bell team appeared around a bend, the bell-hamed leaders nodding ahead, followed by six horses, with the fifth chain hanging loose, and the great, heavy wagon crowding behind. As they started down into the creek, the driver, with a quick thrust of his foot, clamped on the giant brakes, and then, when they struck the level, as suddenly released them. Simultaneously, the leaders lowered their heads, sixteen tugs went taut, the chains straightened, and the ponderous vehicle ascended the bank behind the alders. Jim held up his whip. The teamster drew up; he nodded genially.

"Be that redwood you have in the wagon?" asked Jim.

"Shakes," explained the other. "The redwoods begin about two miles ahead."

"Be they as big as they say?" asked Jim. "I'm a timberman. Bess and me have come all the way from Vermont to see them."

ALL the way from Vermont?" The teamster climbed down and held out his hand. "From Vermont, you say! They have mountains there, don't they? But they don't have redwoods, do they? An' you come all the way to see them?"

"All the way."

"And it wasn't gold that brought ye?"

"I came to see the redwoods," answered Jim Bascom. "To live among them. Gold is a fine thing; but I'm not a mining man. I'm—well, I suppose you'd call me one of these weak nature lovers."

"A nature lover, eh! Well, you an' me has got about the same weakness, then. My name's McKiernan. But you'll call me Charlie. Mountain Charlie is what I'm known by. I live on top of the mountain. We're both weak, Mr.——"

"Bascom—call me Jim."

"Mr. Bascom. But she's a mighty fine weakness. They ain't many as come to the redwoods for love. Most of them comes for greed. It took God a thousand years to grow them trees; but it ain't going to take men long to harvest them, once they get started. You an' me is going to be needed. You go right ahead and see what

you see. I ain't got much time for talk. Ask the shake men for Mountain Charlie's place. When you get there you'll find the string hanging outside the door. Go right in. Make yourself to home. You'll find some blackberries and wild honey on the shelf for the little girl —and there's venison and flour. When I get back, I'll help you to look around and get settled."

And so the Vermonters went on, until they came to the head of the gorge, where the first redwoods, 200 feet high, stood portal. Jim Bascom alighted and took off his hat. Here were the trees! He had heard and he had believed, but for all that, he had doubted that any growth could attain such a proportion; here was an immense basin with mountains bordering the sides, green as far as he could see, mountains, ridges, valleys; all redwoods, a pliocene grandeur that was limited only by the distance. Jim knew woods; but compared with this, the forest that he had known was only brush. Here were silence and grandeur; where God had wrought a masterpiece out of solitude; and where man was nothing.

Mounting the buckboard, he drove the horses into the forest shade, a shade such as he had never known, unending, superb, and beyond translation. The first limbs were a hundred feet from the ground. Except for a few hazels and wonderful groups of fern growth that occasionally reached as high as his head, there was no underbrush; the ground was carpeted with brownish leaves, with creepers of the yerba buena drooping from the banks and tiger lilies growing in the hollows. The road led up from the creek bed, and wound about the

The Original Sempervirens Club

Unto the Children

lines of the mountain side, dodging the trees, seeking the gulch heads, always ascending. As they climbed, the gulches below them took on the color of green, and the treetops, whose trunks were three hundred feet below, lifted themselves by the roadside. Always there were trees, colossal and unending, million-columned and red-fibered. The air was sweet and cool, and accented by the majesty of silence. Deer trotted across the road and stopped to gaze at the new intruders.

HALF-WAY up they came across their first man. A tree had been felled, one of the greatest of them all, and was lying athwart the mountain. The limbs were untrimmed; two cuts had been taken from the heart but the rest was neglected. The man was making shakes. Jim Bascom drew up to watch the man's dexterity with froe and mallet, and to examine this most wonderful of woods. The shakes fairly flew off the froe, straight, clear-grained, perfect. The red-fibered bark, stripped from the cuts, was piled on either side. The bark was fourteen inches thick. The man was old and taciturn, and loath to answer questions.

What would he do with the rest of the tree? Oh, that would lay; it was only a fair tree, and was good for only two cuts; some trees were good for more, and some less, and some for none at all. After the two cuts were done he would fell another. He had a good eye and did pretty well. Redwood was only good for shakes! The man lit his pipe, and started on another block. Did he know Mountain Charlie? Oh, yes! Everybody knew Mountain Charlie. His place was on top of the mountain,

couldn't be missed. He hauled shakes. Everybody hauled shakes—or cut them.

Right there Jim Bascom made the resolve that he would never cut shakes. He had fallen in love with this great, quiet forest; shakes were a sacrilege! In another hour he had come to the top of the mountain, and here again he was in for a surprise. They had told him that the forest looked down upon the ocean. Now he saw! Below him lay miles upon miles of rolling forest, undulating to the ocean shores, and losing itself in the matchless blue of the broad Pacific. The wind was in the west, and the tang of the ocean's salt bathed the faces of the father and daughter.

Mountain Charlie's home—a rough cabin—was close at hand; in half an hour Jim had biscuits on the way, with venison steaks broiling, and wild honey and blackberries for the little girl. Then they ate.

NEXT day came Mountain Charlie. Under the shade of the great sequoias the two men compared stories. Jim Bascom had come far; and he had come for no other reason than the woods; he would buy a place that he could call his own, and live where he could get the most out of his appreciation of God and nature. Did Mountain Charlie know a place that would suit him?

Mountain Charlie did.

And so they mounted horses next day—Bessie riding with the mountaineer—and rode through the great forest to another ridge that overlooked the ocean, to a patch of eighty acres containing a growth of redwoods even

more colossal than those that they had seen. The land bordered the road that led over the mountains, was easy of access, and was for sale. So they continued on to the county seat, and closed the bargain. When Bascom returned, he had the title to eighty acres of the finest redwoods in all California.

And then Bascom cut his only tree. He had to build; and he had to have lumber. Besides, the trees were so close that he must make room to build on. But the tree was not wasted. Because he was what he was, and perhaps because he was weak, he set out to use up all of the fallen monarch. Men laughed when he began to build his house; and when he told them that he proposed to use it all, they derisively bade him build a hotel. And out of their derision he got his idea. He had to make a living and he could do it so. Why not? It was better than going out with ax and crosscut and defacing the work that God had accomplished in a thousand years. He could show his redwoods; but he could not deface them. They were symbols of God.

And because he was what he was, and because he was greater than they, the men of the mountains soon stopped laughing. One does not laugh at the great in nature. They began to love Jim Bascom. They began by calling him Mr. Bascom; but they finished by calling him Uncle Jim.

The fame of his establishment traveled afar. Set in the redwoods, his Sempervirens Hotel antedated, by 40 years, a thousand resorts of the present day. Guests came from San Francisco, from the East, and from the

four corners of the earth. And of them all, there was not one who did not go away a better man for having known Uncle Jim Bascom. He was like his redwoods, made by God.

Years passed and his locks turned to gray and silver. His daughter grew up and married, then died, leaving another girl child to prattle and play on the lap of an older man. He did not wither; because he was great. Those who sat at his table and heard him say grace—he always said grace for his guests—and listened to his soft booming tones of reverence, attested to his greatness. But Time conquers all. And Time tells the story.

ONE day when the baby Bessie was five years old, a carriage, wonderful for its time, and drawn by snow-white horses, turned in at the gate of the Sempervirens. Jim Bascom had that day dressed his grandchild with his own hands—they could be as soft as a woman's—tied her ribbons, and promised her a number of things. Also, he had dressed himself in his neatest broadcloth. The equipage was driven by a negro coachman. A man stepped out of the back seat, helped a lady to alight, and then picked up a boy, slightly older than Bessie, and placed him upon the ground. The man was dapper and handsome, wore creased trousers, a silk hat, and side whiskers; the lady was trim and frail, clad in voluminous silks, a basque, and a toque bonnet that adorned a wonderful head of hair and a face of rare, refined beauty; the boy, dressed in the prevailing Fauntleroy costume, was like his mother; he had her eyes, blue, wistful, almost yearning; and like his mother, he was delicate.

There were greetings with Uncle Jim, shaking hands all around, and with the boy and the girl going through their most approved curtsies; following which they retired to the part of the hotel that had been set aside for state occasions. The man was Horatio Kenton, timberman, capitalist, and monarch of all the redwoods; the lady was his wife; and the boy, his son. Inside the hotel the boy and the girl, after a bashful interval, edged into friendship; and while they were doing so, the older people proceeded to get down to the motive and purport of the visit—namely, the boy's health, and arrangements for leaving him a year with Uncle Jim Bascom. For, be it known, Horatio Kenton, although he owned the redwoods, mountains and valleys, and leagues upon leagues of forest, was of the same flesh as his humblest workmen. Uncle Jim had a name; the doctor had advised the mountains; and there was no place like the Sempervirens.

After dinner they went out on the west veranda, where they could look over the miles of forest and watch the sun dropping down to the blue Pacific. One was the king, the other the high priest, of the sempervirens. Jim Bascom thought naught of lucre, and valued the trees only as a glory of nature; the other gloried in the conquest that was to be and the industry that it would awaken. Horatio Kenton was a great man, well known both socially and financially, and a leader of his time; he had come up from nothing, and in the old days had purchased two thousand acres of redwoods for a keg of whisky, a sound mule, a Mexican saddle, a guitar,

and two dollars and twenty cents in cash. The seller was a Mexican, one of the heirs to a Spanish grant, who had no use for the land, and considered that pleasure and song were the best part of living. With the mule to ride, the liquor to drink, and the guitar to play he had gone on his way, never to be heard of after. But he had given a start to Horatio Kenton.

And as they talked, Bobbie Kenton, he of the yearning eyes, watched the man of the forest. The lad was frail, delicate, pampered. When the old man advised him to run and play with the little Bessie, he was afraid, afraid of the forest, afraid of its somberness and shadow. But he did not fear Uncle Jim; something drew him to the white-haired man. Uncle Jim took him on his knee.

"You have been unkind to the lad, Mrs. Kenton," he said; "unkind through your love; you have kept him too much indoors. What Bobbie needs is the open air."

And the next day, when the carriage bearing his father and mother disappeared down the road, the world changed for Bobbie Kenton. The crown prince of the redwoods had been bound over to their high priest. Uncle Jim had faith in his redwoods, in their majesty, and in nature; the best way to bring up a child was in the open air, because it was closer to God.

IT WAS June. The air was neither hot nor cold, but balmy. The long bell-teams, sporting music, flooding the air with cadence, swung lazily around the mountain bends. The boy, playing with the girl, spent his days in the open; the air was fresh, and fragrant with leafy ozone; there were flowers in the woods, pink oxalis

in the clusters, yellow pansies about the tree trunks, and great lustrous paint-brushes to be gathered by the roadside; while in the hollows grew the tiger lilies, and in the darkest corners, the mysterious and never-to-be-forgotten jack-in-the-pulpit. Overhead were the redwoods, somber, magnificent, and beyond the boy's understanding. And there were Uncle Jim and his buckboard; and down below the hotel, not a mile away, was the old shake-maker cleaving the strips with mallet and froe, and piling up the long banks of bound shakes, the shake-maker who was almost as wonderful as Uncle Jim, who told stories and made pancakes by throwing them into the air. There were houses to be made out of the shakes and adventures to be had on the fallen tree trunk.

And again there were the momentous days when the men made ready for the felling of another tree; the building of the staking, the making of the guide cut ten feet up from the ground, the swinging song of the axes, one-two, one-two, one-two, clipping the monster chips and never stopping until the cut, big enough for ten men to sit in, had been completed. Then came the sawing and the wedging, the long, long wait, the quivering anxiety while the sawyers drove in the last wedges, the sweating, quadrupled strokes with the crosscut, the trembling top, and the rifle-like pops of rending timber, one upon another, culminating in the last pop that signaled the withdrawal of the saw and the retreat to safety; the sad, graceful swoop as the monarch dipped its hoary head and fell to its death, slowly at first, then faster, until it had gained the speed of a bullet; the whir

of its fall; and last of all the deafening impact as it crashed upon the mountain-side. Then came the echoes, rolling and reverberating, booming the dirge among the forest mountains.

Then there were the days when Uncle Jim hitched the horses to the buckboard, and with the children perched on the seat, drove through the dark forest to the head-waters of the creek, where there were trout in the riffles and more adventures; where he taught Bobbie Kenton to go forth with line and fly and balance himself upon the great logs spanning the pools where lived the speckled beauties; where there was wildness and abandon, drift-wood and spraying waters; where the waterfalls and the freshets sang a song that was lifted up and swallowed by the great forest above them. Always there was that forest, unending and primeval, with Uncle Jim to explain and tell the story: how it had been planted by God, long, long ago when the white man had not been thought of. And as he told the story, coming home from the creek, the children would fall asleep, to be awakened by the elfish music of the bell-teams winding through the redwoods.

Then there were the days when some teamster, sturdy and dusty, would stop at the hotel and wheedle the old man into letting him take the youngsters down the mountains, trips that were perilous as well as delightful, with the exhilarating pleasure of sitting, with feet straight out on the high seat, fourteen feet above the ground, while the wagon, drawn by the eight-horse bell-team, creaked its way through the shadows of the forest.

And always there were the bell-hamed leaders, ringing music and warning. And there was laughter from the children, with the driver calling: "Gee-haw! Coom now! Geet up!" Following which came the screech of the brakes and the rumble of wheels, until they came to the long bridge that spanned the creek at the bottom of the canyon.

There the alders grew, and the waters rushed on their way to the ocean. Then came the pull to the railroad, where hundreds of men were unloading machinery from the narrow-gauge cars—rough, mustached men who spoke soft words to the boy and girl, and asked, one and all, for the health of Uncle Jim. Here there were candies and other good things, with the men leaning over the counters wanting to buy for the little ones, and talking among themselves of the days that were at hand, of lumber, of the forest and of work—always they talked of work.

They were days for Bobbie Kenton, days in which he grew, in which the color came back to his cheeks. The autumn came and then the winter, with the rains and the winds whipping through the great forest, with the gales tearing at the giant sequoias, freshets in the gulches and the roar of mountain waters, days that were epic to Bobbie Kenton, full of terror and grandeur magnified by his tender years.

Spring came and early summer; and then, one day, the snow-white horses drew up at the gate of the Sempervirens. There were tears and laughter on the part of Mrs. Kenton, a shaking of hands all around, and

colorful tales on the part of Bobbie. That evening they sat again on the west veranda and watched the sun sink into the blue Pacific.

And the next day they all set out through the forest, through the sequoias that had stood for thousands of years, on their way to the station. The bell-teams were plentiful that day and there was music from a thousand bells. Machinery was coming into the forest, long lines of wagons, creaking and groaning up the mountains. Occasionally they passed lines of oxen that were to be used as log teams. The mountains stretched for miles upon miles, all sempervirens. The boy had come to love them, with a love that he had learned from Uncle Jim. They were the redwoods. Some day he was coming back! They belonged to his father. Some day they would belong to him. He spoke to the girl.

"Some day I'm coming back, Bessie—back to you and Uncle Jim!"

IN TWO weeks the Kentons were in New York, and Bobbie was in school—a school that was a long way, both in distance and in fact, from the redwoods, where there was no Uncle Jim and no wild nature; but where there was a proportional value of culture and discipline. The world had changed for Bobbie Kenton.

But he never forgot. At first he wrote long letters—laboriously printed—to Bessie and Uncle Jim; letters of longing and homesickness. There were no trees where he was, and no mountains. He received answers from the old man, and afterward from Bessie, telling him what he would know. Always he remembered the red-

woods. And he always took pride in his knowledge they were his own. His father was a forest king; and he would rather be the son of such a father than anything else in the world.

The school days passed, and the prep days, and he entered college, but still he had not returned. In his junior year at the university, he lost his father and mother and was called to New York, where a kind old lawyer, friend of his father, computed his startling wealth—startling to others, but not to Bob Kenton, because almost any one could have wealth. But he was now a forest king, and that was worth more than all the money to be thought of. Old Jim Bascom, the forest man, had become only a dream; but he was still remembered, because Bob Kenton had taken him for a model. To be like Uncle Jim was to be a man.

Always he thought of going back.

Then came his graduation, and on that very night a letter from Bess, a letter with the brevity of a telegram: "Father is in trouble. I can't say more, because I may not have the right. Please tell me whether you will consider a letter of explanation."

BOB KENTON read the letter twice, thrice, and then bought a ticket for California. Six days later he was on a train coming into the basin at the head of the Los Gatos gorge, the same basin that Jim Bascom had entered fifty years before, dark-colored, beautiful; but different. Bob looked for the redwoods here, but he was not disappointed because they were not the ones that he had known. He knew that farther on, after they had

passed through the long tunnel, they would come out among the trees that he had known with Uncle Jim, his trees, the trees that made him king. The train would pass straight up the canyon and into the mountains, on the other side of which was the domain of the Kentons. As they cut through the darkness the conductor came back.

"I've seen your face before, my boy," he said. "What's your name?"

"Perhaps you knew my father," said Bob. "My name's Kenton. My father was Horatio Kenton, the timberman. I haven't been among the redwoods since I was a child; now I'm coming back. They were wonderful."

The old man took a deep breath; then he chuckled: "So you're Kenton's boy. An' you're coming back to the redwoods. Glory be! Tell me, lad, do you remember?"

"I have never forgotten," answered Bob. "I have always loved the redwoods; and I have always wanted to come back. I spent a year among them when I was a child, a year with a grand old man, Uncle Jim Bascom."

The white light of day was shining just ahead; and the next instant they were out in the bright glare of the sun. Bob stared through the window, expecting to see the forest. Then he drew back as if he had been shot. He looked out of the window on the opposite side of the car.

The trees were gone!

In place of the sempervirens, stately and majestic, looking down from the centuries, there was a waste and a desolation that broke sheer to the bottom of the can-

yon. The mountains were terrible; as far as he could see there was but one picture, a slashed landscape, furred with second growth and jungle with a few forlorn snags, blackened and splintered, bearing ghastly witness of what had been.

The old conductor read the look in his eyes; he laid his hand on Bob's shoulder. "My boy," he said, "you loved them, didn't you? I am sorry. We all loved them. But they are gone now! Here is your station. If you reach Uncle Jim in time, give him my regards."

Bob descended into a swirling pool of dust, and into a heat that, for intensity and stagnation, outdid the Sahara. Here was the station where he had come when a boy, where the lumberjacks had bought candy for Bessie and himself, and where the deep shadows had known no end. A number of clattering trucks were taking on some foreigners who had come up on the train; and several of the drivers offered him a ride. But he refused. What a contrast to the place that he had known, with its long bell-teams, ponderous wagons, and sturdy mountaineers. The tragedy made him think of Uncle Jim Bascom. What would Uncle Jim be without his trees?

Sadly he took the road that led down to the long bridge. In the old days this road had been one of the wonder spots, winding under the shadows of the sequoias, with the gray squirrels playing in the tree-tops, and the sound of rippling waters floating up from the bottom of the canyon. Now it was an abomination of brush and slashings. The sun was intolerable and the

dust came over his shoe-tops. One of the trucks caught up with him; the driver stopped.

"Better ride," he called. "She's almighty hot and dusty. These mountains ain't no snap."

"No," said Bob. "I'm feeling old-fashioned. I think I'll walk."

Behind the truck was a rig of a different order, an old-fashioned buck-board, drawn by two old dappled grays. An old man in a duster was driving, his chin whiskers working in unceasing movement toward his nose. At the word "old-fashioned" he drew up.

"So you're feeling old-fashioned, young feller? Well then, mebbe you're not too perkish to ride in a buck-board." Then, when Bob had seated himself: "They ain't many of you young whipper-snappers nowdays that will ride in a rig like this; but I've known some al-mighty good men, and durn sight better men than they have now, that never rode in anything else. Be you a city whipper-snapper, or a country one?"

"I don't know," answered Bob. "But I come from the city, if that means anything."

"Well, it don't mean much. Be you from Frisco?"

"From New York," answered Bob.

"Oh!" The old fellow reached out with the whip and touched one of the grays. "Then I don't suppose you ever rode in a buckboard. This here one is considerable old, older'n you by a long ways—like Oliver Wendell's one-hoss shay. I bought her from Uncle Jim Bascom. Did you say you come from New York?"

"Yes."

"Hump!" As a suggestion of disgust the word had a superlative intonation; the old fellow went into an abrupt silence. Bob studied the slashed landscape and busied himself with his own thoughts—thoughts that were comparative and full of regret. The forest was gone; the redwoods were no more. They had been planted by God. They had stood for thousands of years. Those were the words of Uncle Jim Bascom. Where was Uncle Jim? This was the old buckboard! Bob had ridden in it when a boy. He remembered the words of the conductor: "If you see Uncle Jim in time——"

JUST in the middle of his thoughts the old man interrupted. "Whoa!" He pulled in the horses. "Young feller, what do you think of these here mountains?" He made a sweep with his arm.

"Mountains are always wonderful," answered Bob, "but these partciular ones would be a whole lot grander if the forest had not been cut."

"Yep." The old man fished out a plug and bit off an angry chew: "You said a mouthful. An' where do you suppose that forest went to? Do vou know what I call it? I call it the Whipper-snapper Mountains."

"The Whipper-snapper? I don't understand."

"No? Well, I'll tell you. You see that stump yonder? That stump was once a tree three hundred feet high—by my measurement. And there was thousands of others—tens of thousands; as far as the mountains went—the greatest forest that the sun ever shone on. They was here a thousand years. Then one day a white man comes along and buys them for a jackass and a saddle

and then, to improve on what God took a thousand years to do, he converts them into a whipper-snapper. By which I mean that it was Horatio Kenton who turned this forest into money and gives it to his son. That's what I call a great trade—the greatest forest in the world for a whipper-snapper!"

"Oh!" Bob felt the imputation; his sadness was being touched by shame. "Are there none left?"

The old man twisted the tobacco to his cheek. "Yes," he said, "there's eighty acres. Eighty acres of the best they was. They belong to Uncle Jim Bascom. Leastways, they did. Uncle Jim is about done for now."

UNCLE JIM? The conductor told me if I saw him in time to——"

"Yes," said the man sadly, "Bill Whitten knows; We all know. All the mountains know. They're murderin' Uncle Jim. But a lot they care. It's downright murder! Giddap!" He clutched at the lines. "I tell you, boy, it's enough to make even a hardened old sinner like me get out and weep!"

"Tell me," said Bob.

"I will. You see, this Uncle Jim Bascom is an old pioneer who came out here in the early days to live among the redwoods. And he's lived here ever since. Well, when the forest was all cut and prices went to the sky, they wanted his trees. But he wouldn't sell—not for millions. 'Cause, you see, he was their sort of high priest, seeing's he'd lived with them for fifty years. But the sharks got him at last through some high-fangled finance, and then they sold out to the lumber people. We

The Majestic Redwoods Live Again in the Life of
Uncle Jim Bascom

For the Sequoias, Sempervirens, and Gigantea, for the Great Out Doors and All that Makes Life Worth Living

tried to save the trees by going down to the legislature and having them buy them for a park; but when we got down there, we was only a bunch of rubes. Besides, what's a redwood, until it's cut? It's like that forest that you are looking at—you want to see it because it's gone! When the redwoods are all gone, some one will wake up and set up an awful howl!"

"Anyway— There goes another of them automobiles! They belong to the lumber people; them foreigners is the woods crew. They're cutting down Uncle Jim Bascom's trees! When I came by, they had Big Aleck, the tree that stands in front of the hotel, almost down. I didn't see Uncle Jim, 'cause I s'pose he was in the hotel; but I did see Bess. Poor Bess! When that tree falls, Uncle Jim will die of a broken heart!" The old fellow held up his whip imprecatingly: "Oh, if they was only a God!"

Bob reached up for the clenched fist that held the whip. "Perhaps there is a God," he said. "Let us see. Could you drive a little faster?"

"And who be you?" The old man turned. "You say that you're from New York——"

"My name is Kenton—Robert Kenton."

The old man's eyes went wide. "Then—then you're the whipper-snapper!"

"Yes," said Bob. "I'm sorry. I'm the whipper-snapper."

Coming around the bend, they caught sight of the Bascom forest, dark green, hoary, primeval, standing out in colossal proportion against the slashed landscape.

Bob took a deep breath when he saw the trees; they were as they had been; here was the picture that he had kept from childhood—part of it. The horses were trotting now, and the buckboard was rocking; as they reached the gates Bob bounced to the ground. The big guide cut had been driven into the side of the tree. On the other side of the staging two sawyers were resting from the last strokes, while the head sawyer with lusty swings sledged in the last wedges. The tree-top was quivering under each impact and the huge trunk was giving forth the creaking pops that warn of a sequoia death. The sight maddened Bob.

"Here, you!" he shouted. "Get off that staging!"

The man who was driving the wedges lowered his sledge and looked around. For a moment he regarded Bob out of his honest blue eyes.

"Hello, Bub," he said at length. "What did I hear you say?"

"I said get off that staging!"

"And who be you?"

"My name is Kenton—Robert Kenton," Bob told him.

"The devil it is! Thought mebbe you was the prophet Joshua! Well, Bub," said the man, "if you feel that way, they is only one thing to do—come up and throw me off!"

Bob climbed the staging. When he got to his feet the man had laid aside his sledge. Here was a man who would fight; Bob knew the kind.

JUST a minute," said the man. "You say your name's Kenton? Any relation to old Horatio? 'Cause if there is, they's going to be a hell of a fight."

"I'm Horatio's son." Bob took off his coat.

"The devil! And you want me off this staging. What's the idea?"

"The idea is this. There's not going to be one of these trees scratched with an ax! And I don't care who they belong to!"

The man opened his eyes. "And you're a Kenton! That's a funny way for a Kenton to talk. Did you look at these mountains round about?"

"I did," said Bob. "And these trees stand! That's why you are going to get off. Come!" He took a step forward; the man drew back.

"Hold on, Bub," he said suddenly. "I'll fight anybody, any old time; but 'll not fight for a bad cause. Did I hear you right? You want to save these trees?"

"Exactly."

"Then there'll be no fight. You don't think one-tenth as much of these trees as I do. I been feeling like fighting for a month—like fighting the man who ordered them down. Bub, the day is yours."

The man leaped down; in a moment he had called off his crew. "This will be good news to Uncle Jim," he said. "Good news! You're a Kenton, Bub, and you can buy them. God knows——"

His speech was interrupted by a girl coming up the path. She held out her hand. Just then the great sequoia gave forth another pop that caused them to withdraw

from the range of the guide cut. The girl glanced up at the quivering top; Bob saw the tears in her eyes and guessed at the emotion that she was suppressing. He took her hand and drew her away. Once again the tree spoke with an ominous pop.

BESS," he said, "I am sorry. I received your letter and I came. I did not know. What does Uncle Jim think? The forest is gone! I feel like a—a whipper-snapper!"

The girl smiled sadly; but through her sadness Bob recognized the child he had played with so long ago.

"You have been listening to Mr. Rollins," she said. "He is always talking that way, because he does not understand. You must not feel badly. Your father was a great man; and he was always our friend. What has happened had to be. We know, because we have lived with the redwoods; and living with the redwoods is living close to God. He has told us. He planted these trees centuries ago against the coming of his children."

"And Uncle Jim? What does he say?"

"Just that. He understands. The redwoods have built up a civilization. That was God's wish. Of course, it was hard to see them go; but one must not be selfish. Only"—there were tears in her eyes—"we could not bear to see this old grove go! Something had to be left. God sent you just in time. Father!" She put her hand on his arm and turned him to the hotel. "Come."

Together they walked down the driveway to the rambling hotel of the Sempervirens, with the monarchs spreading above them and casting a shade that was

never-ending. It was like the old, old days; a gray squirrel chunged its call and shook a bushy tail on a limb a hundred feet above him; it had been a long time since Bob had heard the gray squirrels.

When they were inside the hotel, Bess stepped to a door and held her finger to her lips; the word that she spoke was pregnant with caution and hope:

"Grandfather!"

BOB found himself in an old-fashioned room, cool and soft-lighted, suggestive of tragedy. On the bed at the far side, propped among the pillows, his flowing beard vying with their whiteness, was Uncle Jim Bascom, asleep. Silently the girl closed the door. The old man stirred and muttered. It seemed to Bob that he was like a spirit, a personification, a super-druid who had come to give his life for this greatest forest of all and then, like the other druids, to pass away. The poetry of the man's spirit drew Bob to the bedside, where, with Bess, he knelt down. The old man stirred again and opened his eyes. Bob felt Bessie's hand pressing against his own, warning, hopeful. Again Uncle Jim moved and reached out his hand, stroking the hair of his grandchild and reaching out tentatively, until he came to the other. Then he glanced down, and for the first time Bob looked into his eyes, the eyes of Jim Bascom of long ago. The man had gone back, in this last moment, to the days of their childhood; he was smiling; and he spoke.

"Ah!" he said. "It is Bobbie. Bobbie and little Bess. You are come again to the big forest. Tomorrow we

must hitch up the buckboard, we three, and go down to the long bridge by the alders, through the redwoods that God took a thousand years to grow, to the stream where the trout play among the riffles. God is great and good! He made the redwoods for men, for you and little Bess and for Uncle Jim. A thousand years——"

Bob felt the hand upon his head; through the open windows the breeze drifted in from the Bascom forest, the breath of the redwoods, soft and sweet with the perfume of the centuries; then he felt the fingers tighten and set. Simultaneously, the stillnessof the forest was broken by the pop of the wounded tree, followed by the sibilant sweep of its majestic fall and the deafening impact as it crashed to earth. The old hotel rocked with its passage. Then came the echoes rolling back, and the booming of the dirge over the denuded mountains.

THE dirge! It seemed to Bob, at the moment, that the end of all things had come. He had not heard the exclamation behind him nor had he seen a man at the door. Uncle Jim was lying still, his withered hand as white as the coverlet upon which it rested. On the other side of the bed was Bessie Bascom, weeping softly. Bob had never seen any one quite so beautiful. The man at the door was standing solemnly, his hat in his hand; he spoke again, very quietly, and motioned to the kneeling youth. Bob stood up. The man took him by the hand and led him through the door.

"Am I too late?" asked the man.

"I do not know." Bob looked up. The stranger was a city man, a business man; his clear-cut face and trim

attire were proof of that. "I do not know. Who are you?"

Out of clear blue eyes the man looked at Bob.

"I am Seeley of the Kenton Lumber Company," said he. "And you are Robert Kenton?"

"Yes," answered Bob, wondering. "But how did you know? I did not send for you."

"Perhaps I guessed it," said the man. "We have been trying to purchase the Bascom forest for a long time, Mr. Kenton. It was your father's wish. He loved Uncle Jim Bascom. When he died he put aside, with the company, a certain sum for the protection of these trees. But the scalawags had managed to gain control of them, and we could not pry them loose—until a few hours ago."

"Then you have bought them?" asked Bob.

The man held out his hand; there was a tear in his eye.

"Here are the papers," he said simply. "Give them to Uncle Jim."

Bob returned to the room. He took the withered hand and thrust the papers among the bent fingers. Then very softly he explained what they were and what had happened. And in the presence of that great calm face it seemed to him, more than ever, that he was talking to God. The light in Uncle Jim's eyes was the light of long ago; it played on Bob and filled him with the feeling of greater things. Bob had the feeling of talking to one who had been on a long journey. Uncle Jim had come back; but he was not listening. He seemed to know it already. He put his hands on the heads of the boy and the girl.

"Listen," he said, and his voice rang with the old freedom. "That was Big Aleck. Big Aleck has fallen. Hasn't he?"

"Yes," said Bob sadly, "that was Big Aleck. They had the tree ready to fall when I came in."

On the other side Bessie was looking up out of wondering eyes.

"Big Aleck. Ah, yes, that is so." The old man straightened. "But you must not be sorry. I had saved the big tree for you and little Bessie. God cut it down against your coming. God is great and good. God does not fail. He knows. I was on my way to Him; but He sent me back—back to you and little Bessie. Out of that tree you shall build a mansion such as the mountains never knew. And——"

He was interrupted by a stifled exclamation from the side of the bed. Bessie was looking up; her face was red; but her eyes were full of happiness.

"Father, father!" she was saying. "No, no. That was a long time ago. We—" She dropped her face to the coverlet.

For a moment the old man looked down at the girl. Bob felt his hand upon his head. It was like a communion, a bond that he could not sunder. He heard the voice speaking like a benediction:

"I know, child. I know. It is an old man's whim; but it is God's wish. It has been a long, long time as you say. The rest must be left to you and Bobbie. But I can wait. I have still something to live for."

CALIFORNIA REDWOOD PARK

Stage Coach in Fire-Hollowed Redwood.

California Redwood Park

Sometimes Called

Sempervirens Park

An Appreciation

FRIEND WM. RICHARDSON, SUPERINTENDENT OF STATE PRINTING
SACRAMENTO, CALIFORNIA
1912

GRAY countries and grim empires pass away,
And all the pomp and glory of citied towers
Goes down to dust; and youth itself shall age.
But, oh, the splendor of this autumn dawn,
This passes not away! This dew-drenched range,
This infinite great width of open space,
This cool, keen wind that blows like God's own breath
On life's once drowsy coal, and thrills the blood,
This brooding sea of sun-washed solitude,
This virginal dome of open air—
These, these endure, and greater are than grief!
Still there is strength; and life, oh, life is good!
Still the horizon calls, the morrow lures;
Still hearts adventurous seek outward trails;
Still, still life holds its hope!
For here is air and God's good greenness spread!

—*Arthur Stringer.*

As a recognition of her generous and timely aid and inspiration in the acquisition and development of this forest park, for the people, this work is respectfully dedicated to

MRS. PHOEBE A. HEARST.

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A FOREWORD.

California's Redwood Park Commissioners put forth this booklet, for the double purpose of conveying to the people of the State a better knowledge and a keener appreciation of the State's forest reservation, and also to impress upon the people the importance of securing for State ownership the entire area of the Big Basin.

This task was entrusted to the Secretary, to whom it has been a literal labor of love, and the same can be said of the others whose writings are embodied herein. A too common idea of a forest is of sombrous silence. There is silence in this place, but it is a silence in which the voices of creation can be heard. There is majesty and sublimity in these time-defying trees, but as we have tried to show, there is also in this wood beauty and color, and woodland life in many manifestations. This forest is an aggregation of arboreal wonders. It is moreover a cathedral, a university, a sanatorium, a source of solace to the soul, an inspiration to the intellect, a tonic to the body.

California is munificent with her penal institutions, with her national guard and asylums. Will the reader help us to secure as liberal consideration for Sempervirens Park?

ARTHUR A. TAYLOR,
Secretary,
California Redwood Park Commission.

September, 1912.

THE ever green bowl of the Big Basin brims over with secrets. Half whispered lures beckon down the trails, elusive meanings lie in the dreamy hollows, fleeting significance brushes past our ears in the flutter of bird wings, and the great trees shed upon us an atmosphere of living light and shadow that tests and tries, while it heals our world-troubled spirits. We do not know why we are alternately comforted and made restless, why in rare, flashing moments, our hearts ache with the ecstacy of a piercing truth; for we live mostly in a world of perverted meanings, and the vague insight of life so diametrically opposed to our general existence, stirs, disturbs, before it can soothe.

If the iron is not too heavy in our souls, we know that we need Nature, but we go to the fields and the forests in hordes, we cling together in crowds, we travel far to hear the voice of a mountain stream; but we secure to ourselves the chatter of our own kind within call.

Then the half-told stories of the Open are not always happy lures. Sometimes the riddles hurt, are too hard to even dream of solving; yet if we only hear the faint, far echo of the everlasting question, not knowing that it is a question, hearing only the unintelligible, eternal murmur, we are not in the forest in vain.

Virginia Garland.

Genesis of Sempervirens Park.

IN the beginning there was chaos, then the vasty deep, then a convulsion that upheaved the bottom of the sea and it became dry land, followed by those incomprehensible æons of time which we call geological periods, during which the forces of Nature were working with a zeal and a patience infinite in their scope to prepare for the presence of man on this planet.

In this region creative power was manifested in a peculiar manner. The magnitude and the intensity of the titanic throes of the Earth Mother here are beyond the reach of the imagination, beyond the grasp of scientific certainty.

Geologic stratas were uplifted by earthquakes, burned through, fused, intermixed by volcanic action, purged by torrential downpours, scoured by floods, seared by heat in a way and to a degree quite out of the ordinary method of world making.

The chalybeates and the sulphurs and the salts found elsewhere in deposits, are here diffused and dispersed, impregnating the springs and forming a widely distributed distillate for tree nutrition.

The mutation theory has been worked out with soils and sandstones, as man has demonstrated it with flowers

and plants. Thus it is that the geologist of to-day traverses this territory hammer in hand, knocks at every rock and boulder and looks and listens only to be amazed and dumbfounded. He tries to classify and describe, but he ends in uncertainty and doubt.

Dr. J. C. Branner, head of the department of geology in the Stanford University, who with assistants procured the data for the government geologic atlas of this region, states therein:

> Above the basement complex of acidic plutonic rocks and metamorphic schists and limestones, the age of which is uncertain, there are represented within the Santa Cruz quadrangle alone fourteen recognizable formations. Nine distinct and far-reaching disturbances, as recorded by profound inconformities, not to mention many local readjustments, took place in the region during the deposition of these formations. Volcanism was active during several epochs, and at least one of them lasted for a considerable time.
>
> The structure is complex. In many places the strata are intensely folded, faulted and crushed. Faulting, folding and crushing have doubtless been going on in this area since early geologic times. The rock surface exposed is too small and the geology too complex to afford any clear conception of the physical geography of the past. The rocks occur in such confusion, so faulted, altered, decomposed, that their sequence has not been clearly made out.

Doubtless Nature had her mind on doing some distinctive, transcendent thing in this territory.

What we know is that when the caldron was allowed to cool, there was left a more or less broken and detached

range of mountains, ten to fifteen miles from the ocean, with elevations of from 2,000 to 3,500 feet. Living waters flowed from their sides and their interception of the rain clouds traveling inland from the ocean gave a heavy precipitation to all the region. Thus came running streams in profusion, plowing their swift courses to the sea, eroding V-shaped valleys.

In one instance this seaward flow was intercepted by spurs from the mountain range, and three streams and their tributaries converged into one before finding an outlet through a cleft in the granite-ribbed buttress that bounds the tract on the south.

This peculiar conformation enclosed an area of approximately 14,000 acres, and when the California pioneer came upon the scene he called this the Big Basin to distinguish it from the narrower basins or valleys of other streams.

In Primeval Times.

LIFE, cataclysmal life, which manifested itself here with such fervor and intensity in the geological formation and topographical contour of this territory, imparted an equally phenomenal vitality to the animal and vegetable creation. Fossilized and entombed in the rocks, evidences of the marine life of this region are abundant.

Its ever-virile character is shown in the survival of that peculiar tree of the past we call the Sequoia, which not only awes us into silence and adoration as we stand before its living presence, but which by the visible tokens of prior generations takes our thought and our imagination back into the abysmal depths of time, before history was written, before tradition preserved the records of the human race.

The *Sequoia sempervirens* (Redwood) propagates itself more generally from stump shoots than from seed. Sometimes we find the offspring circled around the parent tree for two and three generations. In instances, oft-repeated in a redwood forest, the parent tree grew, lived, ripened, decayed and died, and with a speed incomprehensible for its slowness, passed back to earth and air, leaving a crater-like cavity where once its trunk was reared.

There were giants in those days.

The primeval redwood, not content with a circular expansion of forty, or fifty, or sixty, or seventy-five feet,

often stretched its mighty bole over an area ninety feet in circumference.

These stupendous craters are found here up to altitudes of 2,000 feet, mute monuments to the continuity of life, surpassing sworn statements in the integrity of their testimony to the vivifying and revivifying influences of the soil and climate.

When modern man appeared upon this scene (only sixty years ago) he found the tract, which he called the Big Basin, as viewed from its rim, a sea of tree tops, difficult to penetrate by reason of its redundant undergrowth, occupied by a population apparently able to hold its own against intruders.

Grizzly bears were numerous and not bashful, cougars abounded, wild cats were plentiful as were lesser animals of the predatory class.

But then, as now, the lure of the forest was irresistible. Hunters came seeking game, campers came seeking health and recuperation, woodmen came spying out the tall, straight trunks of redwood that would split easy—"shake trees," as they were called, which could be cleft with the ax into long, broad shingles: from stump to branch, a hundred feet or more of "clear stuff" to be packed out on muleback to market.

Later, homesteaders invaded its semi-sacred precincts, mighty men with the ax and the rifle, who for reasons of

their own sought the solitude. There were only few of these intruders, but enough to eradicate in process of time the grizzlies and the cougars, and to make wild cats scarce. Provided as the other animals were with admirable cover and, delivered from the mountain lion, their arch-enemy, the deer and small game became permanent joint tenants with man.

Crude trails were cut to the coast and to the San Lorenzo Valley, and tanbark to some extent was donkey-backed over the ridge to Santa Cruz tanneries.

Thus it is that while we write of this as a virgin forest we do not mean that it has not known man, but that it has not surrendered or been sold to the ravishing, exterminating saw, and retains its woodland integrity.

THE REDWOOD.

By Dr. C. W. Doyle.

Hail, Monarch of the Woods! A thousand years
Have sped since first you reached forth to the sky,
And still your trunk its giant frame uprears,
As though it mocked at time and would not die.
Your roots defy the earthquake's shock, your crest
Denies the puissance of the winter blast ;
Year after year your lordly branches dressed
Their phalanxes in green, and still you cast
A mighty shadow 'thwart the tangled glen.
Rooted in majesty for aye you'd stand,
But now your doom is told—lo! pigmy men
Will mar your kingly state with ruthless hand ;
The widowed hills and woods will mourn their chief,
And tears distil from every blade and leaf.

—*Surf, August 25, 1894.*

Early History of This Forest.

ORIGINALLY, the redwood forest ran from the Pajaro River to the sand dunes of San Francisco, in an unbroken embankment of evergreen against the westerly slope of the Santa Cruz Mountains. In the middle eighties, the inroads of the lumbermen had become so extensive that the idea of conserving a portion of this forest for posterity found expression through Mr. Ralph S. Smith of Redwood City, editor of the *Times and Gazette.*

It has been said that Mr. Smith's zeal in behalf of a forest reserve was stimulated by the desire of the Spring Valley Water Company to secure a permanent cover for their Pescadero watershed; but be that as it may, Mr. Smith is entitled to the credit of first propagating the idea in print of saving a share of the redwoods for the future. Editor Smith not only advocated it in his own paper, but he obtained a hearing through the San Francisco *Chronicle,* which, under the caption of "A Redwood Park," published the following:

Among the most beautiful of all coniferous trees is the redwood of California, the *Sequoia sempervirens,* as the botanists call it. It is purely indigenous, and with the mammoth *Sequoias* form the distinctive feature of the forests of this State. For many years it has been the chief source of the lumber supply of the State, and in consequence the redwood forests have been enormously depleted. It is known to comparatively few that

within fifty miles of this city, in a southerly direction, there is a redwood forest of one hundred and eighty square miles, or over one hundred and twenty thousand acres. The northern two thirds of this tract is almost virgin, there having been but slight inroads made upon it. This tract begins on Pescadero Creek, forty-six miles from San Francisco. Its western edge reaches to within about four miles of the Pacific Ocean, on an average, and it crosses the summits and covers the slopes of the Coast Range lying between the bay and the ocean.

The forest of which we are speaking is owned by private persons, but it is understood that a portion of it ample for a redwood park, say twenty thousand acres, can be bought at the present time for fifteen dollars an acre, or three hundred thousand dollars for the tract. It is, however, becoming the object of speculation, as redwood lumber is yearly becoming scarcer and more valuable, and if any action is to be taken for its purchase it should be done at once.

It is believed that if the State of California would appropriate a portion of the purchase money, the rest could be raised by subscription from public-spirited men who know and appreciate the value of such a preserve to the State. Its proximity to this city makes it more available and desirable for the purposes of a great forest park than any other body of redwood in the State.

Ralph S. Smith of Redwood City, to whom we are indebted for much of this information, has taken a deep interest in this scheme, and will undertake, if the State will appropriate a reasonably generous sum for the purchase of this tract, to be placed at the disposal of the Forestry Commission, to raise an equal amount by subscription for the same purpose. He has studied the subject carefully and intelligently, and while he is certainly an enthusiast upon it, his enthusiasm should commend itself to all who care for the future of the State.

We can see no good reason why the legislature should not make an appropriation toward the purchase of this tract, pro-

vided the Forestry Commission shall indorse it. They are competent to judge of the desirability of the location for the purpose of a redwood park, and if their report should be favorable, and a perfect title can be secured to the State, we know of no way in which the public money could be better invested, or which would return a better income for all future time. We must not be construed as meaning that the park would pay an annual interest on the investment into the state treasury; but there are other kinds of income besides interest. Golden Gate Park is not a paying institution in the ordinary acceptation of the term, but it would be hard to convince a San Franciscan that the city has ever invested any money to better purpose than there. Yosemite, Yellowstone Park, Niagara—none of them pay money dividends, yet each is worth untold wealth to the nation.

We cannot measure everything by the decimal notation, nor figure a percentage of money gain upon every investment of wealth. When redwood lumber becomes scarce and valuable, the esthetic point of view will not commend itself to those who have or can obtain control of this body of redwood, and the dollars will weigh heavier with them than the beauty or pride of the State. They will not care to preserve timber having an actual cash value, in order that future generations may enjoy a redwood forest. It would be too much to ask of private individuals to sacrifice material interests for an abstract proposition.

The *Chronicle* article, viewed in the light of subsequent events, was both prophetic and pathetic.

Needless to say, the State did not acquire twenty thousand acres at fifteen dollars per acre. Fifteen years later, the State bought a bargain when it obtained solid redwood timber land at one hundred dollars per acre.

The reserve in the mind of Mr. Smith extended over the Pescadero and the Butano, instead of the Big Basin.

A Redwood Park was not heard from again until 1889. In the mean time, Ralph Smith and his plans had both passed away. At this time, a portion of the lands now included in the State Redwood Park, a tract of 1,300 acres, was projected as a game preserve.

Ferdinand Lee Clark, who had an eventful and distinguished career in military and civil life, was in Santa Cruz at that time, and sought solace and escape from the world in camp life in this spot. Mr. Clark wrote for the Santa Cruz *Surf* an article describing the operations then instituted, in which he said:

> The region in and about the Big Basin is the wildest and roughest that can be conceived, the slopes being rugged and the level plateau covered so densely with underbrush as to be almost impenetrable.

The operations then in progress he describes as an intent to fence the tract of 1,300 acres, for which purpose 2,500 pickets were to be split. A space twenty feet in width was to be cleared along the line of the fence.

> All the underbrush on the plateau of Waddell Creek of 300 or 400 acres will be cleared away and a great redwood park will be opened. Fourteen men are now clearing for a road. It is expected the place will be swarming with hunters and fishers.

Owing to some manipulation of land titles, this work fortunately was soon suspended. (Some of the pickets then split lie on the floor of the park, still sound, in 1912.)

Mr. Clark also wrote of "an immense redwood tree of great height and 28 feet in diameter." (Now called the Father of the Forest.)

Photo by Streator.

Father of the Forest.

His personal letters were so enthusiastic that the writer determined to take the trip. It required three times as many hours to reach the edge of the Basin from Santa Cruz as it does now to "run down" in an auto from San Francisco to the Governor's Camp in the heart of the park. The twilight was deepening when the writer and a companion prepared to tarry for the night at an abandoned tanbark camp, utilizing the donkey mangers for mattresses.

The writer slept that night—nay, he slept not but lay looking upward, following the faint lines of light that traced the trunks of the redwoods, until they touched the stars. An optical illusion, perhaps, but not a delusion. Jacob's ladder was no more a myth or a miracle, for verily the redwood tips were in contact with the heavens.

The things heard in the stupendous silence of that night, the things seen in its impenetrable darkness, were unutterable, but the slogan "Save the Redwoods" was seared into his soul.

Primal Appearance.

In the morning we followed the bark haulers' trail to Captain Clark's camp, where two days were given to genuine exploration. During these days we often shared with Captain Clark the joys of discovery, looking for the first time upon curious creations, marvelous growths, and exquisite manifestations of woodland beauty hitherto unseen by mortal eyes.

Sight-seeing was a constant battle with the underbrush,

fighting our way step by step, often crawling on hands and knees, and sometimes compelled to adopt a more prostrate position, as was the serpent of Eden.

But the rewards! One by one we traced out the big trees since become famous for their size, for their height, some for their symmetry and timber-producing capacities, some for their wonderful triumphs over fire, some for quaint growths of burl, some for their strange contortions, but all challenging admiration and giving forth an impression of life and power beyond transmission in speech —beyond conception by careless beholders. We stood dumb before a mammoth redwood stump fifty feet high, the basic terminal of a tree, which some time had been riven by an unknown force. Its sundered halves lay stretched prone on the earth for more than two hundred feet, embalmed in moss, through time so long measured that on the top of the stump, out of the air had been gathered soil and sustenance sufficient to support a thrifty young fir tree several feet in height.

We felt a strange thrill when standing in the presence, and in the interior, of that phenomenal redwood which has come to be called the Mother Tree. Resisting alike the stern hand of Time and the deep fires of affliction, she still abides serenely, green at the top, while succeeding generations of other trees have sprouted, grown, matured, decayed about her.

Not in the depths of the Grand Canyon, nor from the summit of any mountain, did we ever experience such a sense of sublime awe, as when through the thicket, we

Mother of the Forest.

came into the presence of those four redwoods, now known as the Calendar group. Four trees, straight as arrows, symmetrically seamed, rising more than two hundred feet into the heavens, of exactly equal size, standing an equi-distance apart, directly upon the points of the compass, north, east, south and west. To this day there is a mystery about these trees that refuses to resolve itself into the commonplace.

But the mornings—and the same mornings dawn here forever, past, present and future. Oh, the dawning of the mornings! When the light so softly, gently, so sweetly persuasive, so tenderly penetrates the night, stealing upon the sleeper in the open like a fairy's touch upon the eyelids. You must awake, for you are about to witness a miracle as old as creation, as fresh as the morning dew.

Soon you can see "trees as men walking," and witness a movement in the forest which has stirred all animal life and set millions of leaves a quiver.

Oh! the melody (if we may use the word) of this filtered light which comes down through the tree tops, diffused, rarefied light, the Divine light that made the morning stars sing for joy on creation's dawn.

In was our leaving day, but before breakfast there was to be a visit to a fallen tree in the bosom of Opal Creek, from whose upturned stump three lusty redwoods had grown, standing in exact line with each other, with their foothold embanked in moss and ferns. It was a "fierce" brush fight to reach the spot, but then the wonder and the beauty, the suggestiveness and the sublimity of the scene,

Photo by Applyby.

Growing Trees on Upturned Stump.

absorbed every sense. Tiger lilies, taller than any man, with blooms of flaring fire stood by the side of the prostrate body of this past potentate of the forest; swaying, overhanging incense-breathing azaleas hid the stream, and just as the first rays of the sun touched the upper branches of the surrounding trees, a thrush, perched high on an oak, poured into the arboreal silence a libation of praise that vocalized the very soul of the forest.

These trees have since become known as the Crucifixion group.

When we went forth into the world again, no man believed our report, and as for preserving redwoods, the timber-cutting population of that period looked at us with the same contemptuous pity that they would if we had proposed to conserve the waters of the Bay of Monterey.

Nevertheless, within twelve years, the State invested a quarter of a million dollars in this forest, to the honor and credit of its legislators, and the ultimate blessing of mankind.

Early Explorers.

During that year several articles were published in the San Francisco *Chronicle*, the San Jose *Mercury* and other State papers, emanating from Captain Clark and others, all giving favorable consideration to the project of preserving a "Redwood Park of the Pacific." Editorially the *Chronicle* gave emphatic endorsement to the plan, and of the work of publicity carried on at that time said:

F. L. Clark, whose interesting accounts of the Santa Cruz Big

Trees have lately been published in the *Chronicle,* has been exploring the recesses of the Big Basin, a grand area of mountain land lying in San Mateo and Santa Cruz counties, taking the elevation of the prominent ridges and mapping out the intricate system of streams that have their rise in that region. Mr. Clark has entered the basin from different directions, obtaining information by actual observation of value to those interested in the topography of the country, and aiding materially in the correction or confirmation of surveys made. This work is in the line of that undertaken by the late Ralph Smith, who, as editor of the Redwood City *Gazette,* was untiring in his efforts to secure as a national park some portion of the great groves of redwood that are now rapidly disappearing before the ax of the woodcutter.

Captain Clark traced the headwaters of the Pescadero, the Butano, the Waddell, the Gazos, Boulder Creek, and the San Lorenzo, and the elevations and directions he gave have been confirmed by the Government surveys since made. His last article ended with these words:

All this great triangle is one vast forest of noble redwoods interspersed with groves of oak and many kinds of pines, with a dense undergrowth of smaller trees and shrubs.

He was solicited to prepare a paper on the *Sequoia sempervirens* to be read before the State Horticultural Society at its meeting in Santa Cruz in 1891. This paper was afterward published in *Wood and Iron,* and portions of it obtained a well-merited circulation in the State press.

His appreciation of the redwood is attested by the following extract:

Nowhere throughout the world can be found trees more majestic—inspiring! There is a grand symmetry in their growth

quite distinct from the sturdy habit of the ancient oaks of Europe, the towering grace of Australia's eucalyti, the pillared shade of the banyan trees of India, or the dome-like, sepulchral forms of the great African baobabs, all of which have excited the admiration—yes, the worship—of man from remote ages.

Involuntarily we associate the Sequoias in antiquity with the Pyramids; and while wandering amidst their massive growths one half expects to find there the ruins of fanes and temples as ancient as those on the banks of the Nile, or the quaintly sculptured monuments of the Toltec and Aztec races, lying half buried in the dense forests of Chiapas and Yucatan.

When these great trees were seedlings—the Egyptian Pyramids were fresh from the builders' hands—the foundation stones of those of South America were not yet laid.

In those dim, distant days the very LAND from which they sprang was—geologists affirm—yet newly upheaved from the ocean depths. The rugged range of the Sierras, on whose western slopes the *Sequoia gigantea* is only found, looked down upon the broad, shallow lake covering the valleys of the San Joaquin and Sacramento; while on the Coast Range hills the delicate foliage of the *sempervirens*—our own "redwoods"—began to tinge with ever-living green the otherwise bare elevations.

In the growth of these great trees one feels there is a tremendous vitality that time cannot weaken—that the passing centuries seem but to renew. They are prostrated by violent storms, by earthquakes, by the ax of the woodman; here and there they are undermined by floods or eaten out by oft-recurring fires, but though, in the latter case, they may be reduced to mere shells, though we may stand within the lofty shaft and gaze upward through the hollow column's blackened heart two hundred feet and see the nearby clouds drift by, yet the trunk sends out a vigorous growth of branch and leaf and fruit; the shell is still "sempervirens."

"Save the Redwoods."

ALTHOUGH much sentiment was aroused at this time for the salvation of "some redwoods somewhere," yet the movement lacked political or commercial leadership, and lapsed into a waiting mood.

The decade that followed was one of education and evolution along lines of forestry and conservation. The hope of a redwood reserve in the Big Basin was never abandoned, and its advocates often secured a hearing in the public prints. The value of such a reservation had been presented to the late Senator Stanford in so convincing a light that he had determined to secure several thousand acres in this region and annex it to the university he had founded, his death preventing the consummation of his plans. Meantime, Dr. W. R. Dudley, head of the botanical department of Stanford University, made diligent research into the vegetable life here manifest, finding a variety of trees, plants and shrubs, indicating this as a transitional zone for northern and southern trees of the Pacific coast.

On March 17, 1900, a double-column, double-leaded editorial appeared in the Santa Cruz *Surf,* in which, among other things, was stated:

> All lovers of Nature, every person who appreciates the majesty of a tree, every individual whose hopes and aspirations extend into the future, must rejoice in the action of Congress designed to avert the destruction of the famous Big Trees of Calaveras.

Photo by Streator.

The Cloistered Aisle.

John Muir says: "Every *Sequoia,* I fancy, has heard the good news and is waving its branches for joy."

And if these inanimate personalities, so to speak, are waving for joy, it must be not only because the ax is stayed from the *gigantea,* but that there is an assurance that somewhere a remnant of the sempervirens will also be spared from the assaults of the lumberman.

With the impending revival of the lumber business, and the prospective demands for export, the forests will become extinct, long before California celebrates the centennial of American occupation.

The present appears an opportune time for the revival of the agitation instigated some years ago in behalf of a redwood preserve.

Indeed, it is a case of now or never with the Big Basin, the last possible reservation of redwoods which shall not only include big trees, but the varied growth of a typical California forest.

Its peculiar topography and distance from transportation preserved the tract in question from the early onslaughts upon the redwoods, and here within forty miles of San Francisco, as the bird flies, is a bit of forest as pristine as "the perfect world by Adam trod," and whose trees cast broad shadows before Rome was built.

A pamphlet could easily be written descriptive of Nature's manifestations in this peculiarly favored spot. This article can only hint, and suggest, and it must suffice to say that altogether there are over fifty varieties of tree growth within an area of six miles square, including many noble specimens of the redwood, fir, madrone, oak, pine, maple, etc.

Its wealth of fauna and flora is distributed in a way that would delight the soul of a landscape gardener, for within the confines of the "Basin" is constant variation of aspect and altitude.

As it stands to-day the preservation of the Big Basin appears to be "Nobody's business." The timber cutters commenced

encroaching on its limits last year. This summer they will do more mischief, and in two years, the region instead of possessing Edenic aspects, will be worse than a Sahara.

It was easy to stay the hand of the destroyer in the Calaveras Grove, when the women of the California Club took up the matter.

Perhaps there is work here and now for women to do.

Certainly the value of the Big Basin undisturbed to Californians and the world, now and in the future, as compared with the Calaveras Grove is as 16 to 1.

Strangely enough, in a way unperceived, these latter words were prophetic. Within two months an organization had been formed, largely through the efforts of women, and including in its membership some of the most brilliant and energetic women of the State, who aroused, stimulated and rewarded, by their approbation, the men who made the ultimate fight to "Save the Redwoods." The list included Mrs. Josephine Clifford McCracken, Mrs. Carrie Stevens Walter, Mrs. Stephen A. Jones, Mrs. A. T. Hermann, Mrs. Lovell White, and many others.

During the interval extending over two years before the final acquisition by the State of the lands embraced in the present bounds of the redwood park, the necessary expenses of the crusade, amounting to several thousand dollars, were furnished by a woman, a woman whose name will ever be written high in the annals of California—Mrs. Phoebe A. Hearst!

Mr. Andrew P. Hill, of San Jose, an artist of high repute in this State, had ever been an admirer of the redwoods, and as early as 1877 had painted the group that

stands near the Hotel de Redwood in the Santa Cruz Mountains.

At the time of which we write, Mr. Hill had been commissioned by a London magazine to secure some photographs of the Santa Cruz redwoods. He came to the Fremont Big Tree Grove near Santa Cruz, but the owners of the property forbade him to photograph the trees.

Much incensed by their action, the artist began to think, and the more he thought the more the conviction came to him that these trees, being natural wonders, ought to belong to the people. Going home on the train that day he wrote to Josephine Clifford McCracken of his opinions and conclusions. He wrote other letters, among them one to the Santa Cruz Board of Trade, imploring that body to "pass a resolution recommending that Congress be petitioned to make the purchase of the Fremont Grove."

The Secretary replied to Mr. Hill, calling his attention to the Big Basin forest and adding:

> As your enthusiasm is for the smaller proposition, so in ratio will it increase for the larger.

And so it did.

Mr. Hill in writing to the San Jose *Mercury* of this time said:

> The Chamber of Commerce of San Jose quickly followed. A large meeting was arranged to be held at Stanford University and it was found that Dr. Dudley had already examined the Big Basin with Professor Wing, had mapped it, wanted it preserved,

and was just waiting for the lively, go-ahead enthusiasm of some of the members of the Sempervirens Club. Subsequently a splendid meeting was held and it was arranged to make a trip to the Big Basin to examine the new wonderland:

On the 16th of May, 1900, Mr. Hill's party reached the town of Boulder Creek. Of this date Carrie Stevens Walter of the committee from San Jose, wrote as follows:

Our party from San Jose were received at Boulder Creek last evening by the Santa Cruz committee and entertained most hospitably. We leave early this morning for the mysterious goal of our ambition—the Big Basin.

The Mountain *Echo* of May 26, 1900, contained this item:

THE SEMPERVIRENS CLUB.

The visiting party in the Big Basin last week held an enthusiastic meeting the night before breaking camp and formed an organization to be known as the Sempervirens Club. The object of the club is to work for the preservation of the Big Basin and adjacent region as a public park. After viewing and exploring in every direction for several days the members of the party were so impressed with the beauties of the country and the necessity for the preservation of the remaining Sequoias that they felt no time and place could be more appropriate to organize for the effort than right in the heart of the Basin itself, there and then. Thus was the Sempervirens Club of California organized at the foot of Slippery Rock, just across the stream now called Sempervirens Creek, and the place was named Sempervirens Camp.

The zeal and enthusiasm of this club knew no bounds, and it compelled the attention of the State. In a few months it attained a large membership.

First Impressions.

IN THE summer of 1901 a large party of Sempervirens people camped in the basin within the present limits of the park. Of their experiences W. W. Richards wrote:

For five days we made trips throughout that portion of the Big Basin which was accessible by trails, kept open by the deer and other animals. The size and grandeur of the thousands of immense trees that were seen will become world wonders in the future. Their immense height—300 to 350 feet—diminishes their huge bulk to look at, yet there were hundreds of these forest giants, each of which, a score of people surrounding, could barely compass. One stalwart redwood has a partly burned-out opening in its trunk, about twelve feet in diameter and running up to a roof, twenty-five feet from the ground, in which could be seated a large party of people. Four immense trees standing as on four corners, were of ponderous growth, their graceful tops seemingly piercing into the very sky. Beneath their shade the ground is fairly ablaze with beautifully-hued forest flowers, creeping violets, wild sweet peas, wood buttercups, and evening primroses. The glades were garlanded with delicate harebells and tiger lilies and carpeted with tiny ferns, interlaced with sweet-smelling verbena vines. Inviting patches of wild strawberries furnished a feast. This sight of nature's bounty, spread broadcast, might well gladden the hearts of millions of human beings in times to come, who, escaping from the clash and turmoil of a greater San Francisco, seek the enjoyment, the invigoration, the elevation and refinement of this glorious heritage handed down to us through the centuries.

Mrs. Stephen A. Jones, of San Jose, was another of the appreciative campers at this time, as the following will show:

I like to think that this trail has been made, not for utility but for beauty; that the few people who walk over it come to worship amid the cathedral aisles, to bare their heads and bow their hearts before the sacred influences of the primeval forest. All around you giant redwoods rear their stately columns, mingled with firs "fit for the mast of some great admiral." The wind sighs softly through their lofty branches, but lower down not a zephyr is stirring. A solemn stillness pervades the place, broken only now and then by the far-off note of a bird. The sunshine falls in filtered brightness, and flecks with gold the green gloom of the place.

Into this sanctuary the common thoughts and petty cares of daily life dare not intrude; here is peace, serene and perfect rest.

In this vast laboratory nature distills a balm for our hurts, a subtle essence that heals and soothes; and as we breathe the freshness and fragrance of the air we receive also strength and hope from some divine and hidden source. The things of time and sense lose their power over us; spiritual influences are supreme in these hallowed precincts. The fetters of custom and conventionality fall away; we taste soul freedom and feel intimations of immortality.

In every natural forest there broods something of this magic spell, this power to elevate the soul and nourish it with holy thoughts, but, perhaps, none others possess it to quite the same extent as the redwoods. A sense of their hoary antiquity impresses the beholder and makes him realize the brief span of his earthly existence.

The winds of untold centuries have sighed through their lofty crowns; all of modern and much of ancient history has transpired since they first reared their heads above the mold. Nations have

risen, flourished and passed away; dynasties of kings have gone down into the dust; the sands of deserts have blown over forgotten cities; conquerors and conquered have been whelmed in one common oblivion. Vast changes have taken place in the natural world; rivers have left their old, and worn for themselves new, beds; the sea has made more islands, cutting off promontories from the mainland; harbors have been filled up with sand by the tides, so that what were once seaports are now inland cities; volcanoes have built up fresh cones or washed away ancient ramparts in a molten flood.

But under perfect condition of soil and climate our *Sequoia sempervirens* have lived and flourished. Succeeding centuries have seen them more deeply rooted in the ground, and with loftier heads. Storms have not harmed them; strongly buttressed as they are, they defy the fiercest wind that blows. Decay nor age does not blight them; they seem to have no life limit. Even the fires, caused by lightning or some other agency, which ran through the forest centuries ago, only hollowed their trunks or blackened their bark, leaving them still green and vigorous.

Edwin Sidney Williams, of Saratoga, another ever-faithful friend, wrote at this time:

But the chief reason for my growing interest in Sempervirens Park is its beneficial effect on the people of the State, particularly the working people of the bay cities.

There are labor's hosts, "chained to the oar of labor," for whom a costly vacation is an impossibility. It goes to my heart's depth as a patriot and a Californian that even a wild boy from San Francisco's Barbary Coast may come down afoot with his blankets on his back, and if only he obeys the directions of the firm and kind warden, he may be as secure in his nest in or under a great tree as is the Governor himself in "the governor's camp." The captain of "the boys' brigade" may bring his whole

company down and find abundant room. "Campers keep out" may greet him on the road, but when the warden takes him in, the czar of all the Russias cannot put him and his squad out so long as they obey rules.

It's the true democracy of the park which charms me, and in working for it, though the least of the workers, I am working for the better California. No street arab will go back from the grandeur and the beauty of these primeval forests untouched. The higher influences of American life will have a better chance at him if he senses what the State has done in appointing him one of the guardians of God's great trees. And the poor sewing girls can come at slight expense and need no other chaperon than the gracious matron in the park.

In those days the pen of Josephine Clifford McCracken was busy and found expression through the daily newspapers, in *Out West, Western Field* and the *Overland Monthly,* in articles largely argumentative and appealing to public interest. Her own impressions of the great forest in its primal period were expounded in an article in the *Western Field,* on the occasion of a visit when Hugo de Vreis, the Dutch savant, was a guest of honor.

It is a remarkable truth that the beauty of "the way" has intensified with the passing years, and the language of the trees, grown more and more intelligible to human ears. A part of Mrs. McCracken's account of the visit deserves to become historical. From it we quote:

Even those among us who were far-traveled and world wanderers, found something to admire and marvel at here, for far as the eye could reach there was grandeur and sublimity. To the right, the crumbling walls of the castellated cliffs, crowned at

the pinnacle with the decayed glory of broken turrets, yawning casements and half-fallen colonnades, with the dark green trees above, and the brighter green of the brush growing out of the clefts below might well have been the remnants of castle park.

In swinging trot the horses passed through miles of this picturesque country; then the ascent grew steeper. An abyss, it seemed to me, opened below us; the chasm was a wide, broken valley, bounded by a chain of mountains, bold, green clad and topped with redwood trees, single and in masses. When these receded and left an opening toward the sea, the sunny haze made filmy veils to waver and wane in the uncertain distance.

Then we reached the summit; and if the dizzy heights and green depths of the past mile or two had been greeted with cheers and exclamations, the level stretch before us now was no less fervidly admired.

And now we have come to the line of the park. The redwoods stand thicker here; the lower growth and underbrush is heavier and when the road comes nearer to the winding stream, we see enormous shrubs of white blooming azaleas, clusters of fiery lilies and still closer in the densest shade of rock and bush, great clumps of the five-finger fern. The horses' feet fall noiseless on the smooth road; the tinkle of the swift running stream, the subdued rush of the water where it falls over rocks and ledges, the song of the breeze in the tall trees above, cadences forever swelling and forever falling, the endless lullaby that Nature sings to weary heart and fretted spirit—how like a breath from heaven all this falls upon us, the peace be still that is spoken to all who come to rest beneath the canopy of these everlasting trees.

We pass Sempervirens Camp and Slippery Rock, that spot dear to my heart. A slowly-rising amphitheater is this rock floor, with stiff, straight redwoods at the back, and side-screens of firs and madrone, chestnut oaks and young black oaks, with willows swaying here and there. At last we are in the heart of the Big

Basin, where the giant redwoods are awe-inspiring and overwhelming. Tape measure and camera are in constant demand; discoveries of strange plant growth, of flower and shrub, of beautiful forest vistas, were so frequently made that time and distance seemed annihilated.

THE SEQUOIA.

By Dr. C. W. Doyle.

See where it stands in undiminished splendor,
The giant sentinel of Pan's retreat;
Man doffs before it humbly, fain to render
Homage, and lay due reverence at its feet.
No airy spire, no soaring dome tremendous,
Declares God's glory like this tree stupendous.

Man's labors vanish; temple, palace tumble;
And bronze, and marble tarnish and decay;
The greatest monuments e'er reared shall crumble,
Ere this proud tree shall bend before Time's sway.
The rosy morn its royal crest can greet,
While darkness spreads her couch about its feet.

The fairy myths of Greece that figured Naiad,
Housed airy Echo, gave the stars a name,
Apportioned to each Oak its proper Dryad,
Could find for this no genius of like fame;
God's angels, Gabriel, Abdiel, and their kin,
Alone might dwell such noble fanes within.

Father Kenna's Account.

THE honored president of Santa Clara College, Rev. Father Robert E. Kenna, S. J., was one of the original members of the Sempervirens Club, and a member of the first park commission, appointed by Governor Gage, and also a member of the commission appointed by Governor Johnson.

Father Kenna, for the *Bee* of Sacramento, wrote a history of the movement to acquire this park. It is in the words of one having authority to speak in the matter, and clearly and accurately bridges the space between agitation and acquirement of this transcendent forest as the people's playground. Somewhat abridged it here follows:

The happy inspiration of an editor to save the redwoods of the Big Basin from the ax of the woodchopper and the saw of the lumberman became, when published, a mighty, living force through the Sempervirens Club of San Jose, and resulted in securing to the State, and it is hoped, to posterity, a great park of primeval redwood trees.

No sooner was the club formed than an enthusiastic army of supporters was at its back, ready to come to its aid, as it did come, in the moment of danger and threatened defeat. The brigades of this little army were drawn from Native Sons and Native Daughters of California, from the Pioneers and other organized bodies and besides many patriotic ladies and gentlemen

throughout the State, and the majority of the press freely advocated the noble cause. But the real, living force working with and through the club came from the universities of Stanford and California and the college of Santa Clara.

The club's first move was to send an energetic delegation of ladies and gentlemen to Sacramento in 1901 to interview the Governor, and to interest the legislators in passing a bill to save the trees in this basin from destruction. The result of this first move was very encouraging to the club, and a bill was drafted and presented to the Assembly, empowering the State to spend two hundred fifty thousand dollars to purchase two thousand five hundred acres in the Big Basin, and to appoint four commissioners, who, with the Governor as ex officio chairman, were to purchase, control and govern the lands thus secured to the State and the California Redwood Park.

The task of securing the passage of this bill was left with A. P. Hill, who was the right man for the difficult and delicate work. One of the very first movers in the glorious work, full of honest enthusiasm, true as steel, loyal and honest, unselfish and self-sacrificing, his one object was to secure an honest, effective measure to save and to protect those magnificent redwoods. The dear, noble fellow with his wonderful enthusiasm and incorruptible honesty, and open, above-board talk, was an enigma to many old political lobbyists who tried to block his work. Nothing disheartened him, nothing made him retreat until the object of his heart was secured in the passage of that bill to save the redwood trees.

The politicians smiled at his simple candor. He was advised to go home, for there was no hope for the passage of his pet bill. Several times in the heat of the fight he called the writer to aid him, when what seemed impossibilities were demanded.

Two speeches were made in support of the bill, the first a

magnificent oration by Mr. Delmas, worthy both of the subject and of the matchless orator. At the request of the club, I asked Mr. Delmas to speak for the preservation of the redwoods. He consented very graciously. The second speech, if I may so characterize the remarks made by the writer, was given in answer to an earnest appeal of Mr. Hill in one of the dark moments of his work for the bill.

My remarks, though very simple, were given with an earnestness that made the Senators accept them as the sentiments of my heart. I said in part: Senators, I do not come to speak to you as a priest, nor as the president of a great college, nor in the language of such, but as a "forty-niner," and in the language of one who loves the great land of the West, and her magnificent forests which so often charmed my boyhood days and thrilled my young heart with high and noble aspirations. They spoke to me of Liberty, and they filled the mind with great thoughts and the soul with lofty aspirations. These redwoods are pre-eminently Californian, unique in their species and situation, and as a forty-niner I beg you to stay the hand that would harm those that still remain to recall the glories of those vast virgin forests now no more.

I alluded quietly to the efforts, hidden and ignoble and unjust, to defeat the work of the Sempervirens Club. The Senate received my homely remarks graciously, and believed me, and when the bill came up finally there were only three votes against it. It was a great triumph; the passage of this bill was indeed an honor to the legislature of 1901.

The great object of the club and the men and women behind the club was threefold:

1. To save the trees for posterity.

2. To save the trees for scientific study and also the many species of fauna in the basin.

3. Last and by no means the least important was to save the basin and its trees to form a great park for the people for holiday

outings; to prepare a place whither our children and workmen, factory girls and others breathing all the week impure air, might, amidst the great trees and along rippling brooks, breathe pure air and rest amidst those great forests, where their minds and hearts are lifted to higher, purer, nobler things.

Men and Trees.

IT has been calculated that a single tree is able through its leaves to purify the air from the carbonic acid arising from the perspiration of a considerable number of men, perhaps a dozen or even more.

The volume of carbonic acid exhaled by a human being in the course of twenty-four hours is put at about 100 gallons; but by Boussingault's estimate, a single square yard of leaf-surface, counting both the upper and the under sides of the leaves, can, under favorable circumstances, decompose at least a gallon of carbonic acid in a day. One hundred square yards of leaf-surface then would suffice to keep the air pure for one man, but the leaves of a tree of moderate size present a surface of many hundred square yards.

Purchase of the Park.

PASSAGE of an enabling act, and the securing of an appropriation, did not "save the red woods" or establish a permanent forest park—at once. Governor Gage appointed as members of the California Redwood Park Commission, Wm. H. Mills, the land agent of the Southern Pacific Railroad Company; A. W. Foster, the president of the Northwestern Railway and a regent of the State University; Father Robert E. Kenna, S. J., president of Santa Clara Collega, and Dr. Wm. R. Dudley, head of the Department of Botany in Stanford University. The Governor himself was an ex officio member.

It became their duty to investigate, bargain for and buy the best and most for the money, two hundred fifty thousand dollars. They made haste slowly in their task, and when it became generally known that the heavily timbered lands in the Basin were held at one hundred dollars per acre, there was much opposition manifested. It seemed so short a time before when the entire area of the Basin might have been purchased for a less price, that the lumbermen's figures were denounced as a hold-up.

But finally three things were demonstrated.

First, that the amount of standing timber was much larger than had been realized.

Second, that increased accessibility and improvements in milling operations had enhanced their value.

Third, that the lands in question were really cheap at the prices offered.

Mr. I. T. Bloom, owner of three hundred twenty acres within the edge of the Big Basin, had bonded his holdings for the State at one hundred dollars per acre, but when the option expired, he refused to renew it and proceeded to cut the timber.

After the felling operations were over and before milling began, a representative of the Santa Cruz *Surf,* with an expert lumberman, went over this tract, selecting here an acre and there an acre, counted and measured and scaled the fallen logs, and proved beyond question that the Bloom lands would yield in lumber far more than the figures at which similar lands were offered to the State.

Other investigations were made by expert cruisers of the standing timber in the present park area. Perhaps the most convincing of these was by Mr. J. W. Peery of Boulder Creek, a lumberman of long experience, and a man of a reputation that commanded confidence.

We append a part of Mr. Peery's report, as it deserves a place in park history:

We selected five acres out of the northwest quarter of the northwest quarter of section 8 of township 9 south and 3 west as a comparative 5-acre lot as an average of the main body of the whole, and estimated the timber on said 5-acre lot. We found that it contained 168 trees of various dimensions aggregating

712,863 feet, board measure computation, making 142,572 feet per acre. We also selected 5 acres as a compared, 5 acres of the poorest 40-acre lot in the southeast quarter of section 7 of township 9 south of 3 west. We found on this 5-acre lot 103 trees; we estimated these 103 trees to contain 316,272 feet of lumber, board measure, or 63,254 feet per acre. These two 5-acre lots we had surveyed by County Surveyor Ed Perry, the lines brushed out so as to be plainly defined. Now adding these two 5-acre lots together, we find 1,029,135 feet, board measure, on the two 5-acre lots. This 1,029,135 divided by 10, as it was 10 acres, make 102,913 feet board measure timber per acre.

We deducted 250 acres, 10 per cent of 2,500 acres from the whole as waste land, leaving 2,250 acres containing an average of 102,913 feet per acre, aggregating the amount of 231,563,250 feet of timber board measure. We also estimated 5 acres on what is known as the Tom Maddock place. This place was selected by Mr. Maddock and others, and at their request we estimated the amount of timber it contained. This 5-acre lot contained, as per our estimate, 1,124,419 feet of timber. This exceeded our best selected 5 acres 411,556, and I am convinced that ours is a low estimate.

It may be added, in parentheses, that an acre lying easterly across the roadway from the Governor's Camp is estimated to contain half a million feet of standing redwood. These estimates relate solely to milling lumber and do not include the oak, madrone, fir, pine, alder, maple and other woods.

To many readers these mere figures will be meaningless. To partially translate them, it may be stated that the amount of lumber mentioned would much more than

suffice to build a city the size of San Jose, and that it would require to transport it to market 19,280 cars.

Governor's Camp.

During the progress of these negotiations, it was deemed advisable to bring Governor Gage and other members of the Commission, with some lumber experts, into the forest for a few days of personal examination.

To provide accommodations, lumber for a five-room cabin and a cook house was packed on muleback over a trail two and one half miles beyond the terminus of team travel at that time.

This was the last year of the administration of Governor Gage. The following year, after the purchase of the park lands had been completed, and J. H. B. Pilkington appointed warden, Governor George C. Pardee and family occupied this camp for several weeks. In the mean time, after the real estate transfer was completed, Father Kenna resigned from the Commission and Henry F. Kron of Santa Cruz was appointed in his stead.

It was while Governor Pardee and family were at the camp that a notable "surprise party" was planned, Governor West of Utah, then visiting in Santa Cruz, being the guest of honor. Thus it was that three governors were entertained at this camp prior to the opening of the park to the public, and the name of Governor's Camp became attached to the principal stopping place in the confines of the forest.

A majority of the mammoth trees are clustered within easy walking distance of this camp. There is an open glade that gives a space of clear sunshine and green grass, and it borders Opal Creek at a very picturesque portion of the stream.

Distances and directions in and about the park have the Governor's Camp as the focal point.

IN THE REDWOODS.

By A. D. Nordhoff.

As in some vast cathedral, one looks up
Through columns, carved and tinted deep by time,
Up, up to where the light grows faint ; and where
Through windows, made by dust of ages dim
A few pale sunbeams strive to force their way ;
So in the redwoods. Midst the columns vast
Of nature's great cathedral, gazing up
One finds the same dim distance and the same
Pale sunbeam and the same dim, far-off light ;
But in the place of windows, filmed by time,
Great interlacing branches, tier on tier,
Set in a frame-work of the fern-like leaf ;
And in between, faint glimpses of deep blue,
As if some master-hand, with earnest touch,
Had painted every space, 'twixt leaf and branch,
With tender color, like heaven's own.

From the very beginning both the *Sequoia gigantea* and the *Sequoia sempervirens* grow very slowly and yet very steadily upward. The Cedar of Lebanon, though it may reach a very great age, has however in its youth a growth so rapid as to fit it in a few years for many purposes of cabinet or ornamental work. The glory of the *Sequoia* is in its stately trunk, but the glory of the cedar is in its magnificent foliage.

The Tract Acquired.

BARGAINING, and some bickering, came to an end in the transfer of 3,800 acres to the State for the consideration of $250,000. The way the lumber companies who owned the land figured it was that they had sold 2,500 acres of timber at $100 per acre and "thrown in" the other 1,300 acres, about 800 acres of which was chaparral, and about 500 acres cut over, or burned over, but capable of reforesting.

This tract, which by purchase became Sempervirens Park, officially known as California Redwood Park, embraces the heart of the Big Basin.

It was regarded at the time not as containing the ultimate extent of the Redwood Forest Park of California, but merely as the nucleus of the park of the future.

The holding of these lands checked the progress of the sawmill, pending the time when an educated and enlightened public opinion would reach the point where it could grasp the importance of acquiring the entire Big Basin area for a permanent wildwood for posterity.

Present park limits cover the source and course of the several small streams that converge to form Waddell Creek, emptying into the ocean midway between Pescadero and Santa Cruz. The line extends on the north to the ridge that marks the boundary between Santa Cruz and San Mateo counties, at an altitude of 2,390 feet. The main plateau which lies along Opal Creek, from the

Governor's Camp, has an elevation of 1,000 feet. At the southerly line of the park where Berry Creek has its confluence with the west fork of the Waddell, the elevation is 500 feet. These figures make clear the statement that the park is angular—and these angles will often reach 45 degrees.

To this diversity of elevation and aspect is due the varied forest growths here found, which constitute much of the charm of the forest to the visitor. The changing scene is a constant stimulus to take a tramp, and a continuous reward for so doing.

On the lower levels we find dense shade at midday, a soft, deliciously damp atmosphere in which ferns and mosses thrive perennially, covering the nakedness of the rocks, throwing a pall of living green over the prostrate forms of the fallen forest monarchs.

Trees tower for two hundred feet—and more—their roots rejoicing in the percolation from living waters, their topmost twigs catching the sunshine above the canyon depths.

Out and up lie the sandstone slopes, semi-arid, scantily covered with chaparral, swathed in sunshine, swept by the winds, beaten by the storms of winter.

Although not originally included in the scheme to "save the redwoods" these chaparral lands are by no means the least attractive portions of this wonderful reserve. Following a trail one scarcely perceives when the giant redwood forest begins to recede until he is far among stunted growths surrounded by a new low vegeta-

tion, in an elfin wood, feeling the invisible presence of other tree spirits; a different race from those who abide under the shadow of the *Sequoias*. As you look about you observe that the pines and the oaks have lost their majesty and are struggling for a livelihood, putting on thicker leaves and a tighter, stronger bark. The tan oaks have disappeared altogether, and only small live oaks and the most persistent scrub oaks are seen. The pines lower until they are not more than ten feet tall. The madrone gradually gives way to the manzanita, and unless the trail is well cleared, the buckthorn, greasewood and yerba santa will dispute the path.

Californians affect to despise the chaparral, but to the Easterner it is a new curious wonder. The name was given to us by our Spanish-Mexican affiliations, and signifies diminutive evergreen forest, which is neither timberland nor woodland, nor yet brushland, simply chaparral.

The most interesting growths in this miniature of a forest are the manzanita, the mountain mahogany, and the toyon or Christmas berry. In each of these there is such a combination of strength and beauty as to attract the attention of the casual stroller, while to the true student they are a never-ending impulse to observation and investigation, a continuous delight in their seasonal manifestations of blossom and berry. In the burned-over portions of the park a mock chaparral abounds, which is at once a blessing and a hazard. This is composed of the *Ceanothus* (wild lilac). It forms an admirable cover

against wash and erosion, bestows a wealth of color and fragrance during its long blooming period—but forms such a persistent thicket, and is so highly inflammable as to make it a pest to the forester.

TO A REDWOOD TREE.

From a forest poem by CHARLES KEELER.

O tree of trees,
O monarch of the grove,
The mountains sound thy praises,
The birds declare thy glory,
The brooks proclaim thy wonder,—
And all day long the sweet springs sing
To thee their liquid lays,
Thou watcher over birds,
Thou guardian of flowers,
Praise be to thee
For all thy tender care !
The white fog steals amid thy shade,
The sun streams dimly through,
The darkness falls about thy boughs ;
The solemn night is near,
But through its slumbering calm is heard
Thy hymning strain on high.

The Big Fire.

SEPTEMBER the 7th, 1904, was one of those sultry days that occur in this climate only at intervals of years, when the heat bears down from above like a weight, and radiates from the earth with intensified fervor, and the atmosphere is suffused with latent fire, waiting—watching—for some opportunity to manifest itself in flame. And the opportunity came from a sawdust pile at the lumber mill on Waterman Creek.

Warden Pilkington and his co-workers in the park that afternoon discovered a film of smoke above the northern horizon. Presently it was a curling cloud—presto, a denser mass surging against the sky. There was a wild fire, on the hottest day of the year, with the wind driving it parkward with a fiendish velocity. No military call to arms receives the rapid response that follows the cry of "fire." No other fire alarm strikes such terror to the heart or puts such superhuman energy into mortal men, as the signal that announces a fire on the prairie or in the forest. Many men were immediately busy, but on and on came the flames, higher and higher up the mountainside, swifter and swifter, as the superheated air made vacuums, abhorred by the driving flames.

That afternoon of anxiety and spontaneous and speedy effort was the beginning of a battle which lasted for twenty days. There were three ridges and canyons with

creeks for the fire to cross before it could reach the park, but that fire laughed at distance and obstacles, natural and artificial. In the succeeding days, Warden Pilkington had as many as a hundred men fighting the fire and mill men and farmers from all the countryside and nearby towns were engaged in the futile fight.

For weeks the midday sun was a ball of fire in a bank of smoke. The starry heavens no more marked the night, but lurid flashes of flame accentuated the appalling darkness and stifling atmosphere. Although the fire was at times diverted and turned from its course, it was never subdued until rain fell on the 27th of the month. Brands and sparks were scattered over the surrounding country and new forest fires sprang up, until the fire zone extended to the ocean shore, and covered a belt from one to three miles in width.

For nine days Warden Pilkington did not remove his clothing or sit down to eat a meal. Hard work, desperate work, and the favor of Providence saved the central and westerly portions of the park forest, but the scathing fire sucked up hundreds of acres of chaparral and scourged and seared a strip of the finest redwood timber along its easterly border.

In the midst of the fire period the writer rode on horseback over the burned district. Loss of bridges left only three miles of distance from the town of Boulder Creek to be traversed by vehicles. Then the horses swapped harness for saddles. A trackless, trailless area of ashes covered both slopes of Boulder Creek. Fires were burn-

ing at the base of hundreds of magnificent redwoods and flames darted from the tops of tall firs. The igneous atmosphere scorched our faces and the hot ashes singed the fetlocks of the horses as we made our way up on the Cowell tract to Bull Springs, to the summit of the ridge overlooking the devastated domain of the Fire King. Then down into the park. Often compelled to dismount to let the animals clamber down some steep or cross a stream as best they could. Sad scenes there were where once the "Trail Beautiful" had led through redwoods standing "breast-high" to the rider 150 feet above the valley below. Hot tears fell on saddles at the sight of these hundreds of coal black shafts, once the glory of the forest.

It was alongside this trail that the tree stood that carried fire in its bosom for fourteen months. It was a superb specimen of the *Sequoia sempervirens.* Not a "big" tree, but a perfect one to outside appearance. One could not pass it on the trail without praise for its stately beauty. It was about twelve feet in diameter at the butt, and its crown of evergreen swayed in the breeze close to three hundred feet above. As the fire swept over the crest of the hill, it caught in its topmost branches and instead of swirling up the trunk and through the foliage, it burned down, gradually dropping off limb after limb.

As it proved, this tree, like many others of the larger redwoods, was "ripe." The fire found it "dosey" at the

heart, and the flames that had licked up the limbs subsided when they undertook the task of consuming the trunks.

When the rain came it appeared to appease the fire in this tree as it did in others. Contrariwise, the dampness only swelled the punky interior wood and smothered but did not extinguish the fire. It smoldered silently for weeks and then when it reached a knot hole left by a destroyed branch and got vent, it burst out in flame, burning upward, and consuming the portion of the tree left above. It was now the rainy season, and the flames were again quenched as before. Again the fire smoldered for weeks, and again it burst forth at the faint contact with a ventilating wound in trunk. Rain would repeat the douching process, with similar results to follow, ten, fifteen or twenty feet perhaps being burned off at each eruption. The last outbreak occurred in November, 1905, fourteen months after the initial fire, when the height of the trunk had been reduced to about one hundred feet.

This remaining portion still stands, a monument to the noncombustible character of living redwood, a sad memorial of the awful days when the besom of destruction reigned in its wrath over field and forest.

How terrible are the destructive forces of Nature, how beneficent she is when her mood is one of favor!

Following the fury of the fire came copious rains and a long season of growth. Vegetation sprang from the

earth with more than Phœnix-like vitality, and within a year the landscape was reverdured.

The young madrones grew so fast they could not support themselves erect, and their tops swayed like grasses in the breeze. Now, after eight years, the visitor finds little in the general aspect to suggest a conflagration. All the redwoods left standing by the vandals are putting forth fresh branches, and in time their blackened boles will be bronzed by new bark seaming through the blackness. Perhaps but for this catastrophe we would never have known how ever-virile this forest was.

Timber Cutting.

THE LEGISLATURE of 1905 conceived the notion that it would be wise to abolish the park commission and place the forest in charge of the State Board of Forestry, an ex officio body, consisting of the Governor, the Secretary of State, the Attorney General, the Secretary of the State Board of Examiners, and the State Forester.

Thus it came to pass that politics, like the serpent of old, entered this garden of the gods, bringing indifference, neglect and "graft" in its trail.

With the administration that came into power in 1907, Mr. J. H. B. Pilkington, the efficient warden, was removed and S. H. Rambo was placed in the position.

The big fire had left in its wake the dead and charred trunks of the Douglas firs and pines and of many hardwood trees, which were an offense to the eye, a continuous fire hazard and a hindrance to the renewing of the forest. The redwoods, although stripped of leaf and branch, and left with blackened bark, were *sempervirens,* still holding on to life and ready to renew the struggle for existence.

Notwithstanding this well known fact, repeatedly verified in the history of fires in redwood forests, Mr. G. B. Lull, the State Forester at that time, decided that these trees were all dead and should be removed.

Under his authority a private contract was made for the cutting of the "dead timber," and in the winter of

1908 occurred the infamous rape of the redwoods, when scores of redwood trees, some of them among the finest in the forest, were slaughtered and converted into posts, pickets, shakes, grape stakes, etc., before the public was aware of the depredations. No words can express the atrocity of this crime against Nature, against the State, against Posterity.

It was supposed that only dead trees were to be removed, not live ones, and it was weeks before the fact became known that the redwoods were being sacrificed.

The Sempervirens Club sent spies into the park, and the Native Sons of Watsonville, under the inspiration of Mr. George G. Radcliff, editor of the *Pajaronian,* always an ardent friend of the forest, did likewise. Their reports confirmed the rumors of the vandalism.

Two days later, the Santa Cruz *Surf* had a timber cruiser, a photographer and a lumber expert on the ground, and within the week the wanton destruction in progress in the park was before the public in all its bald criminality.

The grand jury of Santa Cruz County, of which J. B. Holohan (afterward State Senator) was chairman, took immediate action; George Wharton James, the noted California author, greatly aided the agitation; indignation meetings were held in Santa Cruz, San Jose, Palo Alto and other places, and abetted by the press of the State, a protest was made that could not be ignored by those in power, and the cutting was stopped, although

the contractor was permitted to remove from the park thousands of dollars' worth of split stuff, every stick of which was rank with robbery.

It is gratifying to state that every official who was concerned in, or connived at, this outrage, has been retired to private life, and also that every redwood tree which escaped the ax has sustained its ever-virile fame by sending out living limbs, increasing in length and foliage every year.

Following the Fire.

WITH characteristic human foresight and sagacity, after fire had scarified the fairest portion of the park, active measures for fire protection were taken. A system of fire trails girdling the park, with laterals along the ridges, was projected and has been carried out, until to-day there are twenty-two miles of fire trails from thirty to sixty feet in width, in and about the reserve.

There is a difference of opinion as to the efficiency of these trails in time of stress, but at all events, they will, when properly improved, provide a splendid system of bridle paths, and afford to the "man on horseback" an admirable opportunity for adventure in the forest.

Since the State acquired the property, an excellent driveway has been constructed from the entrance of the

park to the Governor's Camp, a little more than three miles in length.

From the Governor's Camp radiate trails for pedestrians (most of them horsebackable) which bisect the park in different directions.

Permanent improvements, man-made, in the park consist of a system of waterworks and a sewer system for the Governor's Camp, designed to supply the needs of a population of 500; a building constructed of redwood logs on the margin of Opal Creek, used as a club house, a rustic redwood dining-room with kitchen attached; a log barn, a rustic cottage, called the Lodge, at the entrance of the park; and a system of tanks, pipes and pumps for road sprinkling.

Going In.

ENTRANCE to the California Redwood Park is now via the town of Boulder Creek. Later there will be an open approach from the coast and possibly one from the Santa Clara Valley side, but the seasonal scenic effects will not greatly vary.

It is now two hours by auto from Santa Cruz, one hour from Boulder Creek. The scenic dividends on slower locomotion are great, and the hikers are to be envied above all others.

One of the chief assets of this region is its kaleidoscopic character. There are new scenic combinations and aspects every month. In April the landscape is one continuous unfolding screen of living green.

In May the blue dominates. It is the blooming time of the wild lilac, and the heavens above, the bay beyond and the region round about is all one undulating mass of blue, varying in shade from the faintest azure to the deepest indigo. Following the lilac, the chestnut (tanbark) oaks have their time for blooming, and their peculiar, distinctive shade of green stands out conspicuously amid the general verdure. A little later the azaleas make brilliant and fragrant all the brooksides and byways.

In July the tilled fields have turned dun brown, and the pastures are void of color, but the madronas (the strawberry trees), the real red Indians of the California

forest, are at their best. These trees are ever charming, in form, and foliage, and flower, and berry, but most of all in their bark. No, it is not a bark, it is a skin, delicate in texture, smooth, and soft to the touch as the shoulders of an infant. In the strong sunlight of the summer these trees glisten with the rich color of polished cinnamon. Under certain conditions of light in the late afternoon, the red brown changes to such a brilliant vermilion that seen through intervening foliage it has suggested the red tongue of fire.

There is a human pose to the trunk. Seen through the tangle of the thicket, it looks like the brown, lithe body of an Indian, and in the moonlight the graceful upsweep of its branches is like the careless lifting of a dusky maiden's arms. Every feature of the madrona is feminine.

At this season the glistening lacquer of the new leaves, shifting and changing in the slightest breeze, is offset or contrasted with the leaves of yester-year which have turned yellow, and red, and brown, and still adhere to the tree alongside of the new glossy green leaves, giving the effect of a foliage half yellow, half green. The old bark is peeling off in flakes leaving the new as soft and smooth and shiny as satin. The old leaves as they fall will fade and leave a carpet of pale yellow.

If you enter the park in August, the sere time in California, what? More and more blooms. These lusty bushes by the roadside and others interspersed with other growths along and over the hillsides, which

are so heavy laden with bloom are toyon bushes, and their blooms are the promise of California Christmas berries, those brilliant red berries that vie with the holly and the mountain ash of other countries.

In October it is red route parkward. The vineyards and orchards will contribute a little to this effect, but the protruding presence of the poison oak vine tinges the traveler's vision. Crimson, scarlet or fire-red as it may be, growing in bushy clump, or climbing the trunks of trees and trespassing often on the upper branches, its color penetrates the autumn atmosphere from every angle.

By December travel will be light, but beauteous red berries will be pendant from madrone, manzanita and toyon, and the general landscape will have resumed its April verdancy.

Rocks and Streams.

A DISCERNING man discovered in far away times that there were sermons in stones and books in running brooks. The streams in Sempervirens Park are as ever-living and as everlasting as the trees and the rocks. Amid summer's drouth they abate not their flow, and their merry music can be heard amid the aisles of columnar redwoods, day unto day, night unto night, while the silent voices of the rocks give knowledge to whomsoever heeds.

Everything that geology wrought here was turned topsy-turvy by the elements, and so we find to-day huge boulders of buff sandstone, "big as a meeting-house," wave-worn, water-carved into castellated form by ancient oceans, lying on the very crest of the ridge bounding the basin, more than two thousand feet above the present sea level.

Downward, southerly, from the ridge road, the rocks have been sea-washed and weather-worn into hundreds of picturesque shapes, many of them suggestions of idols or images, and there is a half acre well worth visiting that is suggestive of some ancient cemetery, the outstanding rocks not unlike memorial stones. In other places, the waters cleft the ridges, forming cliffs from fifty to two hundred feet in height, in every instance tapestried with moss and ferns and foliage plants,

Photo by Appleby.

Scene on Sempervirens Creek.

veritable hanging gardens of a beauty which altogether eludes words of description.

All of the streams in the park are rock-bottomed, the soft sandstone of the hillsides solidifying under water until it is "hard as a rock." Boulders and cobbles of conglomerate rock, lifted out of the bed of the streams by the current long ago, have left curious "pot-holes" in the bed of the creeks in many places, causing diminutive cataracts and rapids, which add much to the picturesque beauty of park streams.

Because of the varied altitudes in the park tract, it is manifest that rapids, cascades and waterfalls must be numerous. Not all of them are yet accessible, but those who spend a day in the park usually make the trip to Berry Creek falls, the reward for the walk being divided between admiration for the wonderful verdure on the way and the joy of beholding the brook pour over a declivity of about seventy feet in a sparkling chain of mingled light and water. Sempervirens Falls can be seen—and heard—from the driveway, and there are several other accessible cascades on the same stream.

Josephine Clifford McCraken in one of her visits to the park, wrote of the beautiful glimpses of Sempervirens Creek, and the short space of Opal Creek which was visible, and adds: "We could not visit other streams in their solitary beauty of cascade and deep pool hidden in monster fern and tangled wildwood."

Nature left to her own devices for ages, eroding the rocks, plowing enormous furrows through the hills,

rearing mammoth trees and then toppling them to earth, has filled up the channels of the creeks in many places with a mighty mass of debris, which it is man's work to remove and render the flowing waters companionable.

Something of this work was done in the season of 1911, and it will be continued through the aid of the private benevolence of Mrs. Phoebe A. Hearst, until sufficient State aid is secured.

In a report on this work, the Commissioner in charge wrote:

In a distance of a quarter of a mile, we found five log dams or jams of driftwood, sufficient to obstruct the flow of the stream in high water. We found over twenty fallen logs in the creek bed or across it. Seven of them we converted into rustic bridges, five of them with a substantial guard rail. Most of the others yielded themselves to some sort of useful or picturesque treatment. One enormous fir lying directly across the stream has accumulated a mass of moss on its upper surface, which with the decaying wood has formed a soil sufficient to support a mass of huckleberry foliage and there is also growing on this log, wax myrtle, azalea, fir and oak shrubbery, together with a profusion of ferns. Fortunately, lying nearly alongside this log is another which we were able to convert into a bridge and from which this log-garden can be viewed its entire length.

Not a rod on either bank did we find free from verdure, although this was late August. No words can describe the refreshing beauty of this brook as it was revealed day after day by the removal of the dead rubbish that had encumbered it. Most of the way it is overhung by tree branches far overhead, then a veil of azaleas and huckleberry, near the edge of the banks, while down by the waterside are tiger lilies, many varieties of fern and other wild plants. As a test of your credulity, we might mention that we measured the stalk of one

tiger lily eight and one half feet, and another we found flourishing and blooming from a redwood log, the bulb having evidently been driven into a split in the wood at a time of high water.

In several places huge blocks of sandstone have fallen from the cliff on the southerly side of the stream and rolled to the bottom or lodged along the bank. No sooner are these at rest than they become coated with moss and are attacked, so to speak, by profuse growths of Saxifrage (the rock splitter). Into the tiny, almost imperceptible crevasses made by this plant, seeds fall and larger growth begins. In one instance here, we have a fir tree three feet in diameter which started in a rift in the rock and has split it wide apart. A young madrone is attempting the same feat on another rock near by.

Details of curious growths, of majestic trees, of the many freaks of nature exposed would weary you. I cannot conclude, however, without mention of the spot where a log jam at some point in the past had backed up the stream until the banks became water soaked, causing sound oak trees of considerable size to topple over. In falling they struck the top of the log jam, and have remained in a horizontal position since that time without slackening their growth. In the mean time, the creek forced its way to the side and wore out the land underneath, until now these oaks form a living evergreen canopy about eight feet above the creek bed. We constructed several side paths from the trail to the stream, and made it accessible, so far as we went, for fisher-folk and brook lovers.

Every mile of waterway here is a rare and valuable asset, which, with sufficient funds, might be made not only a joy to the trout seeker, but a delight and solace to those who find in communion with Nature, their most helpful uplift in life.

The temperature of the water in the park streams rarely rises above fifty degrees, and consequently a mess of trout taken in midsummer are fine-fleshed, affording fine sport and fine food.

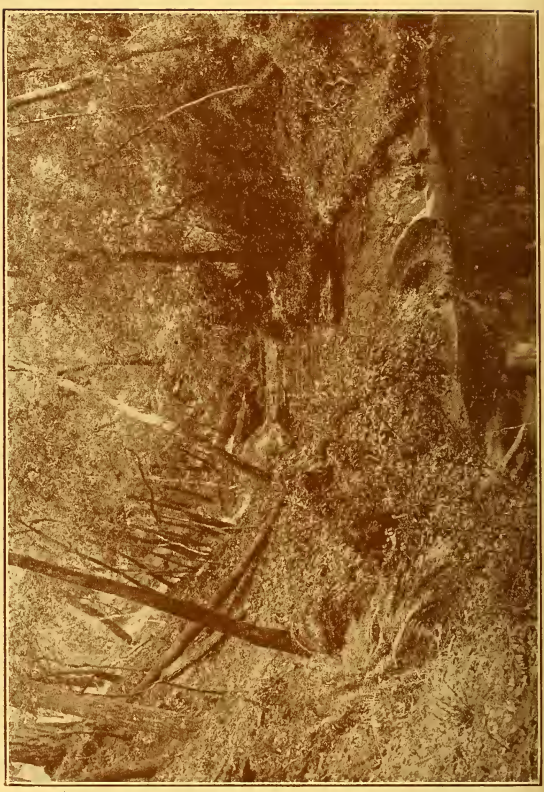

Photo by Hill

Scene on Opal Creek

Flora of California Redwood Park.

By Dr. Isabel McCracken of Stanford University.

MANY people make the mistake of trying to see the Park in an automobile. A flying trip from Boulder, an overnight stay at Redwood Inn and away in the morning leaves the delightful memory of a magnificent drive, a grand old redwood forest through which the light shimmers to the huckleberry undergrowth, pretty streams tumbling in cascades over rocky ledges or flowing leisurely beneath a canopy of delightfully fragrant azaleas. But the traveler who leaves the main road to follow the trail, to push into the woods with blazing hatchet, discovers picturesqueness and grandeur only hinted at on the open road, and a flora abundant and remarkably various.

The species of shrubs and flowers of the park run well into the hundreds, and a day's tramp from the Inn up the China Grade trail to Butano Ridge and out on the "fire trail" skirting the eastern rim of the Basin, within which lies the park, or down the Waddell to Woodwardia Falls and thence to Pine Mountain, well repays the observer in the richness and variety of verdure that will meet him on the way.

The deep woods, the brookside, the trail, the sunny ridges, the mountain peaks, each furnishes its characteristic foliage and flowers, its quota of lichens or mosses, liverworts or ferns.

The redwoods (*Sequoia sempervirens*) of the forest, with their tall columnar shafts, longitudinally fissured, towering into the upper air from the floor of the basin or marching in procession up the numerous glens, interlock their lofty branches with those of the Douglas spruce (*Pseudotsuga taxifolia*) and form a canopy over the various undergrowths through which the light shifts sparingly. The oaks and madrones reach up spindlingly in an effort to penetrate this upper thicket of green. The huckleberry, the principal undergrowth of these woods, catches the shafts of sunlight and screens the shiny-leaved salal, the oxalis, the dainty starflower (*Trientalis*), the whipplea, yerba buena, and yellow violet.

There are but two living species of redwood or Sequoia (named from the Cherokee chief Sequoiah), the coast redwood (*Sequoia sempervirens*) and the Sierra big tree (*Sequoia gigantea*). In the one, the leaves are elongated, borne on short stems and extend forward and outward from the main stem in a flat spray. The cones of the coast redwood or *sempervirens* are about the size of a thimble, ripening in one season but persisting on the branches after the seeds have been discharged. In the sierra redwood the leaves are awl-shaped, sessile (stemless), and extend around the main stem. The cones are as large as a hen's egg, and mature the second autumn after formation. It is curious to note the tendency of the *sempervirens* to form a leafage like that of the *gigantea* in its upper branches, thus bearing testimony to their relationship. The park is a sempervirens forest.

The pine family is represented in the park by two species, the Douglas spruce and the knob-cone pine. The former, already alluded to, shares the floor of the basin with the redwoods, the latter shares the heights with the manzanita and other chaparral.

Douglas spruce is commonly referred to as the Douglas fir, and in the Oregon woods as the Oregon pine. It is, properly speaking, neither a pine (*Pinus*), a fir (*Abies*), nor a spruce (*Picea*), but a member of the genus Pseudotsuga (*Pseudotsuga taxifolia*). As its name indicates it is a near relative of the hemlock (*Tsuga*) having also many spruce-like characters. It may be identified by the conspicuous deeply notched bracts with their spear-like points applied to and extending beyond the scales in the cones. The cones are found in abundance on the ground under the trees. The bark of the tree is deeply and irregularly fissured. The cones of Pseudotsuga, like those of the spruces and hemlocks are pendent, while those of the firs are erect.

The knob-cone pine (*Pinus tuberculata*) is characterized by rather thin foliage with needles in groups of three. The cones are in whorls, strongly bent inward toward the tree, and persisting along the trunk of the tree throughout life.

The oak family is represented by several species. Most abundant of these is the tanbark oak (*Pasania densiflora*). This tree may be identified by its grayish bark and its oblong acute leaves, strongly parallel-veined on the under side. The staminate flowers are borne in clusters of long

catkins of disagreeable odor, like that of the true chestnut. The roundish acorns are supported by cups bearing fringe-like appendages. This tree is said to form a link between the oaks and chestnuts. The little scrub oak (*Quercus dumosa*) is found commonly on the fire trails and exposed places, sharing these with the abundant poison oak, a shrub, belonging to the family *Anacardiaceæ,* which could well be dispensed with in the California woods, though alluringly beautiful in the fall when the leaves turn to shades of scarlet and bronze.

There is a most beautiful grove of oaks (*Quercus chrysolepis?*) on the fire trail on the eastern side of the Basin not far north of where it crosses the park road at the "summit." This grove is a favorite sporting place for the birds. Flocks of bluebirds, yellow warblers and black-headed juncoes flutter about in the sunshine, and nuthatches run up the trees like woodpeckers, pecking into the cracks of the bark for their noonday meal.

Another grove of oaks, delighting the eye of the traveler, stands in the park on the main drive, where it crosses Flee Potrero, more appropriately called Deer Potrero or Deer Glade, for to this quiet, grassy spot the antlered buck, the doe, the young fawn come each day at sunset to nip their evening meal.

The Yew family (*Taxaceæ*) is represented by one species, the so-called California nutmeg or Tumion (*Torreya californica*). The leaves on this tree, like those of the redwood and pseudotsuga are arranged in a flat spray. The bright, glossy, green leaves, tipped with sharp, rigid

points and their nutmeg-like fruit, make the identification of the tree unmistakable. This species occurs as individual trees, never in groups.

The California buckeye (fam. *Sapindaceæ*), while not found in the depths of the forest, is abundant on the sunny slopes of the ridges, on the fire trails, and occasionally along the gulches. Here, however, it does not grow into the robust tree as in the foothills. The foliage is less abundant, but the flowers no less showy and sweet scented, attractive to the bees and butterflies who seek its store of sweets. The tree may be known when in flower (May, June and July) by the large showy clusters of white flowers tinged with buff, with rose and pea-green. The leaves are spread from the end of the stem like fingers from the palm of the hand, with five to seven leaflets. In the Fall the leafless tree may be identified by its burden of pear-shaped fruit conspicuously pendent from the ends of the branches.

The toyon or California holly (*Heteromeles arbutifolia*) has secured a footing here also. It is found in company with the buckeye, but it also fails to reach the handsome proportions of its relatives in the foothills.

The buckthorn family is represented by the coffee berry (*Rhamnus*) and several species, blue and white, of the California lilac.

The coffee berry, with its olive-like leaves and inconspicuous yellowish flowers, is a veritable picnic ground for all flower-loving insects, and when one hears an

unusually busy hum of bees, he may know he is in the neighborhood of a coffee berry bush.

The mountain lilac forms an impenetrable thicket on logged hillsides. It fills the air with a delicious, peachy odor and harbors flocks of mountain chicadees and juncoes. The beauty of a hillside of purple or blue or white is unsurpassed, and the bush would have many friends were it not for the fact that it harbors the wood-tick.

Perhaps the choicest shrub of our mountain woods is the beautiful and fragrant azalea (*Rhododendron occidentalis*), with its fine, large clusters of handsome white blossoms, blotched with yellow and sometimes shaded with pink. In the park we find it at its very best. It follows the numerous brooks and creeks that find their way through the Basin, gracefully throwing its branches out over the quiet pools, where the fishes dart, and over the tumbling rapids where the water ousels sport. Its charming clusters of blossoms and leaves of a rare, fresh green may be seen on all sides throughout the early summer months, but nowhere in greater profusion than out on Trail Beautiful, well on toward the China Grade turn-off.

The shrub most characteristic of the park, with its rich shining green and graceful branches, is the huckleberry. It forms the main forest undergrowth. Its small pink and white waxen bells, its no less beautiful foliage and delicious fruit, delight the woods lover peculiarly.

In company with the tall redwoods, the pseudotsuga,

the oaks, the huckleberry, wherever an opening affords, one sees a thickly branched evergreen with thick, dark green, glossy, elongate leaves. This is the wax myrtle (*Myrica californica*), adding its peculiarly delightful spicy fragrance to that of the azalea blooms.

Beside the huckleberry, the family *Ericaceæ,* or heath family, furnishes several other species differing much in appearance and habit, the madrone, manzanita, salal, pyrola and the saprophytic pleuricospora.

No tree of the woods can surpass in beauty the madrone or Arbute tree (*Arbutus menziesii*), with its beautifully polished terra cotta bark assuming a rich hue, where the sun plays upon it continuously. In peeling the bark becomes fissured into small flakes. Its rich, glossy, leathery leaves and red branches and dainty white bells in the spring, its brilliant display of red gold and green in the summer, the old leaves turning a burnished red before falling, its globular, scarlet berries in the fall, make it a very attractive tree all the year round.

Isolated madrones stand here and there in the woods contending with the oaks and wax myrtle for a share of the sifted sunlight. Many superb madrones are to be found on the Maccabee mule trail and a lovely grove on the Hollow-tree camp trail a half mile or so beyond Maddox cabin.

Leaving the woods on any of the trails by means of which one reaches the ridges, one finds, sharing the mountain slopes with pickeringia, chamise, scrub oaks and knobcone pines, the shrubby manzanitas (*Arctostaphylos*)

Manzanita in Bloom.

with their bushy tops, smooth mahogany red limbs and white urn-shaped flowers, or small apples kissed on the sunny side to old rose or red.

The *Pyrola* is a beautiful little leafless parasite belonging to this family. It is found not uncommonly springing in the trail almost under foot of the traveler. Its red stalks, a foot or less high, carry upward the delicate, deep rose-colored flowers, hanging like fairy bells upon their short stems. In the deeper woods these flowers are white, barely tinged with pink.

Another plant in this family here met with is the dull whitish saprophyte *Pleuricospora.* It is interesting from its relationship to the red snow plant of the Sierra. Its thick white leafless stalk grows from two to eight inches

Ceonothus or Wild Lilac.

above ground in the denser part of the woods, and frequently upon the trail, and terminates in a compact mass of flowers, persisting and withering with the stalk.

Much of the beauty of the trails through the woods is due to the lovely prostrate shrub, the salal (*Gaultheria shallon*). The bright green leaves of this spicy evergreen are beautifully contrasted with the dark leathery older leaves. The pinkish white bells dangling beneath the leaves are veritable fairy bells. The blackish berries are aromatic and edible, though rather tasteless, and are said to have formed an important diet among the Indians.

Toyon or Christmas Berry.

The most unfriendly shrub of the locality is the pea chaparral (*Pickeringia montana*). Ascending the Pine Mountain or China Grade trail one meets with this densely-branched, spiny evergreen, with gray-green leaves, spreading out over the slopes and mountain sides. Its magenta-colored pea blossoms cover the bushes with a

mass of color during the early summer. Its long thorns warn the explorer not to be too ambitious in penetrating its thickets.

One of the most interesting of all the shrubs of the region, peculiarly so on account of its localization, is the golden-blossomed slippery elm (*Fremontia californica*). Its large hibiscus-like blooms are very handsome in the shrubbery of green. It grows only on the mountain slope over which winds the China Grade trail, and is first met with a half mile or so on the trail after it leaves the Opal Creek for its sunny ascent. This bush reaches a height of ten to fifteen feet or more, and may be recognized when out of bloom by the dense whitish felt clothing the under surface of the dark green ivy-like leaves and the tough leathery bark.

The iris family is represented by two species, representing a succession of blooms. The cream-colored irises (*Iris douglasiana*) greet the April visitor in the deeper woods and the blue-eyed grass (*Sisyrinchium bellum*) welcomes the summer visitor to the fire-trail and clearings. The blue-eyed grass appears more like a familiar friend whom we have taken with us from the valley below than as a natural inhabitant of the place.

Three orchids are characteristic of the park flora. One, the reddish-brown leafless coral root (*Corrallorhiza multiflora*), not detected by the casual observer because of its nice blending of red-brown stem and flowers with the dead leaves and needles upon the ground, is, like *Pyrola*, fairly common and to be found in similar situa-

tions. Another orchid, a species of Cephalanthera,* pure white and leafless, is rare. The third species, a rein orchid (*Habenaria*), is quite abundant. Its long ribbon-like leaves appear above ground in the early spring. Later the long slender stem shoots up, carrying its delicate array of greenish buds. The buds unfold slowly, and its blooming season is long. When summer wanes the greenish-white flowers may still be found in shaded corners.

There is no more refreshing sight in the park anywhere than that of a cluster of tiger lilies, standing erect in the shadow of a great boulder or under an overhanging bough, and nodding their spotted orange petals over the rippling or rushing streams or reflected from a quiet mirror-like pool. In one of the most enchanting spots along the East Waddell a group of these peer over a great moss-covered log, like guardians of the spirit of the stream.

The one who has a real affection for the brookside has a grudge against the usual fisherman. Not because he beguiles the unwary fishes with his tempting fly—there are plenty of fish in these streams to spare a few for his pleasure—but for the reckless way in which he crashes through the magnificent stalks of these stately flowers as they bend their graceful heads over the pool, leaving ruin in his trail.

Early in the spring the large rich leaves of polished

*Found in this locality for the first time by Mrs. Juanita Gerlach, June, 1912, on Trail Beautiful, not far from park boundary, and determined by Professor Abrams.

silky green of the beautiful lily, Clintonia (*Clintonia andrewsiana*), appear above the ground. The blossom stalk soon appearing, carries high above the leaves a cluster of lovely blossoms—deep cerise in the more open woods, delicately pink in the shaded nooks. During the sunny July days the flowers give place to the green berry-like fruit which quickly ripens into a rich indigo blue. The leaves, the flower, the fruit, all combine in a richness and uniqueness of feature which makes the Clintonia one of the most distinguished of the woods plants.

The lily family is further represented by the wake-robin (*Trillium oratum*) coming early with its pure white blossoms in its setting of three large green leaves, white in youth, pink in age, false Solomon's-seal (*Smilacina amplexicanlis*), star zygadene, the soap-plant (*Chlorogalum pomeridianum*), whose bulb is useful to the camper who has left his soap dish in town, several brodiæas, blue and yellow, with a rare pink specimen, two species of Mariposa lily, one, the beautiful and dainty whitish globe tulip or fairy lantern bell (*Calochortus albus*), and the other the little star tulip.

Covering all the ground, like a carpet of green is the sorrel (*Oxalis oregana*), its delicate white blossom pinkish in age, amidst bunches of trifoliate, heart-shaped, spotted or green leaves. The "good luck" leaf of four leaflets occasionally rewards the observant.

The long graceful sprays of Yerba buena (*Micromera chamissonis*) trail and interlace over the carpet and yield a delicious aromatic fragrance that delights and charms

the passer-by. The flowers are small and white and appear in the axils of the leaves.

The pretty trailing underbrush, the whipplea (*Whipplea modesta*), keeps company with the yerba buena with its exquisite little clusters of white blossoms and delicate fragrance.

The very dainty little pink star-flower (*Trientalis europœa*) on delicate thread-like stem, in clusters of irregularly shaped leaves, lends itself most attractively to the patterning of the woods carpet. The yellow wood violet (*Viola sarmentosa*) and the little western hearts-ease (*Viola ocelata*), white within, purplish without, add their color and charm.

Of all the flowers that fringe the stream none are more at home than the western Boykinia (*Boykinia clata*). The long slender stems clothed with rusty glandular hairs carrying their sweet-scented sprays of small whitish flowers dashed with a purplish brown tinge, become, with the other saxifrages that neighbor with it, the mitre-wort and alum-root, and with the ferns and reeds a part of the personality of the brook itself.

These three saxifrages may be easily distinguished though somewhat similar in leafage and habit. The fragrance of Boykinia sets it apart. In the alum-root (*Heuchera*) the flowers, though smaller, grow in a loose panicle as in Boykinia, the leaves are, however, more deeply lobed, of a mottled green and veined, particularly late in the season or in exposed situations, in dark red or brown. In the seed pods of the alum-root the two valves

are equal in length. In the mitre-wort (*Triarella unifoliata*) the small white flowers are arranged along the stem, the seed pods are formed of two valves, one of which is conspicuously elongated.

In these woods the saxifrage-like mist-maiden (*Romanzoffia sitchensis*) is present, but rare.

Upon almost any walk one finds the lovely plant of our coast woods, the American barrenwort (*Vancouveria parviflora*) with its sprays of white flowers. It is particularly noticeable from the likeness of its leafage to the fronds of the maiden-hair.

Among the most attractive blooms of the chaparraled hillside, above the redwood line, are the golden flowers of the tree poppy (*Dendromecon rigida*). Its rigid pale green leaves and whitish branches form a great contrast to the darker green of the chamise, the manzanita and scrub oaks with which it keeps company. It has a long blooming season, coming early and remaining late into the summer.

With their flowering season almost parallel with that of tree-poppy and growing in somewhat similar situations, particularly around the rim of the Basin on the north and east, on fire-trails and sunny hillsides one sees grand displays of the mountain balm (*Eriodictyon californicum*) with its pale colored lavender flowers and aromatic gummy leaves, the pitcher sage (*Sphacele calcina*) with its large white flowers aptly called "pitchers," and the bushy monkey flowers (*Diplacus glutinosus*) with their saucy orange faces.

Hosts of other flowers greet the wayfarer who leaves the woods for a day's tramp on a trail that takes him out into the sunshine, patches of glowing Indian paint brush (*Castilleia*) with their brilliant dashes of color, or masses of the rose-pink godetia with its splotched satiny cups, or now and then, its fairer sister Innocence (*Collinsia*) or sheets of the lavender mint (*Monardella*) with its clean, spicy, refreshing odor, in favorable situations the red and blue larkspurs, the pedicularis or Indian warrior, the hedge nettle, wild cucumber vine (*Chilicothe*), vetch, sweet pea, the salmon-colored starry pimpernel (*Anagallis arvensis*) with its rich purple center, the charming pink flowers of the Canchalagua (*Erythraea venusta*), "fresh, wide-awake in appearance, reminding one of a rosy-faced country wench," morning-glories, forget-me-nots, California milkwort (*Polygala californica*), the fragile bluebell flowers (*Campanula*), the wild strawberry, the blackberry and hazel, spiræa, euonymus, bed straw with its fishhook bristles, the thieving broom-rape sending its rootlets into the fibres of its self-supporting neighbors, and many others.

No account has been taken of the various grasses growing everywhere outside of the denser parts of the forest, the beautiful ferns and horsetail (*equisetum*) growing so luxuriantly along the watercourses, nor the more lowly plant life of liverworts and lichens.

Woodwardia Glen, a mile or so above Woodwardia Falls on the Pine Mountain trail, where the luxuriant fronds cover an acre or more and grow as tall as a man,

or the numerous gulches where the *equisetum* spreads its airy mass of spring green, a fallen monster lying across a brook, having become with age and moisture a veritable garden of mosses, lichens, liverworts — and supporting in its decaying tissues, young forests of huckleberry, tan-bark oak, seedling spruces and other growths — the "cave" with its ceiling tapestried with a rich coating of pale green, olive and pink lichens, these, too, are worthy of a place in a chapter on the flora of the park.

The Cave.

By Virginia Garland.

THE cave is a grey green grotto, scooped out of a sandstone slope set high over a small crater canyon. The path of approach climbs the brushy, tree-pillared hollow on to the floor of the alcove hanging over the leafy depths. The dun green tinting is of mould or lichen; and some mineral tincture has left here a shadowy washing of soft green.

The walls and roof are grotesquely carved. The long head of a hound shows faintly, the galloping flanks of a horse whose front you must imagine, disappearing in the stone. Satyr faces bulge from the ceiling. Fragmentary moldings, disconnected reliefs, whose origin and meaning are probably as hard to fathom as the hieroglyphics in an Egyptian catacomb.

On the floury sand of the floor, the footprints of passing wood creatures, heavy hop of a toad, mad whirl of a merry cotton-tail, and the cranium-dotted trail of big black beetles, whose habit is to pause often and stand on their heads.

Under the ledges in far corners, the bedding form of some larger creature. Perhaps the bobcat or the fox dozes here.

Curved and hollowed like a shell poised over the windy canyon, the cave holds a peculiar phonetic quality, alternately hushed and filled with sound. A pleasant eerie

ensation to stand in the momentary stillness and hear he oncoming pattering murmur. Swept from high idges, gathered up from grassy hollows, trailed ground rom the hillside, from the ground, from the sky sound on he wind is sucked up through the drafty crater and lung under the eaves of the cave to echo in pulsing con- inement. Listening here you are literally an eaves- lropper, but unless you have been false indeed to the Open, you will hear nothing against yourself.

Sometimes the wind shifts, pulls away from the pit below, draws all the music and the whispering murmurs out of the cave. Then there is a strange quiet in the place. The carvings come out more distinctly; the little grotto seems to recall some silent, ceremonious happening, some pagan procedure, and if your fancy sees a hushed Druidic rite performing, your fancy may be as near the truth as if it played with an exact science.

Light and Shadow in the Park.

By Virginia Garland.

IT IS perhaps thrice, or twice, it may be but once, in a lifetime that we come mind to mind, heart to heart with poetry. The wide surge of the ocean, the mighty pæan of a storm, the great epic, the world masterpiece, may leave us cold, and in some open, mobile moment, a shadow on a wall, a child's smile, the surprise of another hand laid on ours, and the great exaltation throbs in our soul.

Year after year we may be insensate to the trooping marvels of beauty that pass and repass with the dawn and the dark, and some small, oft-overlooked thing will suddenly fuse our imagination into the white light of understanding.

And when by peculiar training, by burning sorrow, by love, by misfortune, by innate, inherited tendencies, nurtured and guarded in grief and in joy, we come at last to be tempered to a state that often rings true to absolute beauty, yet it is here, too, that the lowly sight, the little, common thing may unexpectedly lift us to the greatest heights.

So it was that one morning in Sempervirens Park I did not for the time being note the magnitude of the

Sequoias, the vastness of the sky, the mighty folded and outflung geology of the hills; I only saw the fall of light on little vines and mosses, the luminous tinted shade upthrown beneath the tiny tangled leaves, the beamy labyrinths of sunshine that underthread the lowly grasses.

Minute ferns unfold and cast their seed beneath a thatched roof of larger ferns; small vines creep and strive, wreathing over their allotted bit of shadowed soil; a delicate forest peeps out here and there underneath a higher, stronger luxuriance.

Much of this winding, tender jungle does not perceive a solar center; for these hidden herbs the sun does not rise and set in a round blaze of glory. Their subdued sun is the reflected light from a pool of sunshine on a big leaf near by, the dispersed glow from the quivering spot of fire, on the flowing brook, or the refracted lustre turned aside from a sunblazed rock and filtered into their screened concealment. From the one source a thousand springs of light caught and held in intricate variety; from these shining wells a million sifted sunrays darting, piercing, curving into the smallest retreat, finding and feeding the tender plants that sheer unblended sunshine would wither and blight. Worlds within worlds along the forest trail, little realms of greenery revolving around each sun filled spathe, every leaf placed in dainty relation to every other leaf, the shadow of sprig and spray cast at the appointed moment over the gilded delicacy of an overheated tendril; and the vision is startled and upheld in

as great heights as if one had been carried into eternal space and watched the planets revolving at his feet.

Hearing the little leaves singing in the sifted sunshine, you hear the song that the stars sing together.

I had watched the moonlight merge slowly into the light of day; so slowly I could not fix the moment when the dense patches of white lifted from the floor of the forest became transparent over the faintly showing ferns and lichens; when the ivory and black that wrapped the trees about, blurred and broke in gauzy rifts, letting the first pale glimmer of green shine through the dissolving moonlight.

Drawn across the dawning a scale wren's tremolo whistle, eager with morning joy, yet so pervaded by the mystery of the transformation, I knew the bird had been awake in the white moonlight waiting for the break of day.

Little candles of sunlight began to twinkle on the tip of the tan oak leaves; kindling sparks dropped from the sunrise fires on the horizon-watching redwoods.

Then the incandescent points spread in diffused fire over the leaves. Heaped layers of sunshine seemed to press the branches down with a burden of gold, that lowered from spire to bough, from bough to the forest floor, traveling down the trees as an hour before the light of the moon had shifted and moved upward.

The sun was in the sky.

Photo by Appleby. Berry Creek Falls.

Birds, leaves, brooks, winds were singing the sunrise song, that matin hymn a darkened humanity has forgot and left to the dwellers of the wild.

The sun fathomed with a shimmering plummet a deep canyon of the basin. Through a gap in the walls, the following shadows underlined, upheld further vistas, curving about, hollowing distance, drawing bright pictures nearer, down a telescope of velvet shade.

A silver redwood shaft rubbed midway with a russet stain, where a falling tree had scraped aside the weathered bark, bringing a shreddy blur of cinnamon to the surface. On the warm red background, a shadow spray of madroño leaves, moving softly, swinging up against the russet tone, dipping its lower outlines into the silvered bark, curveting and flickering as if the wind surely touched its unsubstantial contour. I looked in vain for the actual breeze-fingered madroño spray, then back to the phantom picture, whose etherial composition seemed more real than the growing leaves hidden, lost among green hosts.

Along the stream the light shining through the leaves is green and golden. The foliage has become transparent. Woodwardias, burned and thin, radiate an amber tint. Rosetted branches of azalea leaves, suspended by frail stems, float airily over the water, transmitting a topaz glow. They seem no longer leaves, rather are they spattered patterns of sunshine. Side by side with the real marquetry of light, yellow leaf and yellow sun patches can hardly be distinguished apart; and when the

gloaming comes down the canyon the green dusk is lighted for an hour by these leaf-shaped bits of concentrated sunshine.

There is the keenest value in autumn sunshine. In the days of golden light that come between the unrestrained glow of summer and the wan sunshine of winter, there is, if it may be so described, an experienced, mature play of light. No exuberance wasted, every touch with telling effect, and the warmth and color and thrill of this late, passionate sunshine is like the smile of a sweet, wise woman learned in the power to charm, yet unworn and vital in emotion.

Water is glazed over to most eyes; its depths covered by the veneer of its main color. The surface observer sees little else but a grey or green or blue expanse, quiet or disturbed, as the case may be. But once get a glance into the green lift of a curling wave through whose incredibly delicate walls the sunrise or the afterglow penetrates; follow a shaft of light down deep in a mountain pool, or seek the oblique sight of oily colors mingling on a calm lake, and forever after the light and shadow will show you a world of magic in water. The earth's aspect is frank, open, simple compared to the mystery that lies in aqueous depths. There is nothing under heaven which can so persuade one of merry sorcery, of the spell of incantations, up-called dripping sprites, unseen singing,

the chucklings of pixies and all wood fantasies and all river mysteries, like the long water falling into a hidden green pool sunk in a mossy mountain cleft. Drive Pan from other fastnesses of the hills and you will still find him fingering his reeds, his hoofed limbs crossed, comfortably settled somewhere about the rim of the malachite colored bowl.

I came to watch the light play into the green pool, but would hear laughter, laughter shaking in the ripples. In the white cascades falling, with an upward rise of foam and a glee so ascendant, they seemed to be climbing up, as well as down the rocky rifts, I saw water babies turning over and over. Every splash was the dive of an elf. Do the beryl depths not call to you ? If there is anything akin to river spirits in your blood, your heart pounds and dances with the falls; you want to sink down, down in the gold flecked pool and the tingling cold will be a delirium, a fire in your veins; you will rise dripping, renewed, remade. For half a minute, a fluid purer and nearer the source than your own tepid human blood throbs in your veins.

One strand of the glassy fall swerved, struck a projecting rock, shattered to a million drops, denting the pool with sparkling points. The main stream dropped straight into the green water, forming an embossed milk white circle of froth, that rose from the green chalice ceaselessly opening, constantly blossoming, springing from the emerald level, a white wonder of whirling flower foam.

Out of this marvel is born another—air bubbles. But

have you seen them when for a few fleeting moments in the light that comes up through the virescent liquid, they become live jewels, skimming, darting irridescent miracles of mixed water, color and air?

The effervescent, formless ether, caught in the pulsing beat of the cascade, carried down into the mountain tarn, mysteriously moulded under the water, floated upward, swimming over the surface, cast into prismatic globules that quivering, hold all the colors of heaven and earth. You must have eyes to see; your attention must not waver. One glance will not give you their beauty. Only the long, penetrating gaze will melt your own clouded perceptions and the glaze that closes all water over. If your pursuant faculties have not caught just the right illumined moment of the passing sun-touch, on the little round spheres, they are but dancing air bubbles, colorless and commonplace.

These evanescent glimpses of beauty that we may discover at any hour in the round day of sunshine and shade, are creative through the awakened consciousness as well as revealing.

In a sense, their beauty is not there until we see it; our perception of the irridescent bubbles forms, paints and imbues them with life; for Nature is guided by, while guiding the vision of man. The soul of the earth and the soul of humanity forever touch and mingle. Out of supreme generic forces our conception of beauty brings forth to the eye especial forms, specific expressions of loveliness and life unseen before.

Poetry is not poetry until human hearts beat with its rhythm, until the blood in us sings with its melody, until the mind reaches upward, finding in every song a movement toward God.

What matter if it is a shadow, a smile, a floating air bubble that brings the soul for one moment in perfect harmony with the Universal Pulse?

THE MADRONO.

Captain of the western wood,
Thou that apest Robin Hood!
Green above thy scarlet hose,
How thy velvet mantle shows:
Never tree like thee arrayed,
O thou gallant of the glade.

When the fervid August sun
Scorches all it looks upon,
And the balsam of the pine
Drips from stem to needle fine,
Round thy compact shade arranged,
Not a leaf of thee is changed!

When the yellow Autumn sun
Saddens all it looks upon,
Spreads its sackcloth on the hills,
Strews its ashes in the rills,
Thou thy scarlet hose dost doff,
And in limbs in purest buff
Challengest the somber glade
For a sylvan masquerade.

Where, oh where, shall we begin
Who would paint thee, Harlequin?
With thy waxen burnished leaf,
With thy branches red relief,
With thy poly-tinted fruit,
In thy spring or autumn suit,—
Where begin, and oh, where end,—
Thou whose charms all art transcend?

—*Bret Harte.*

Autumn Color.

By Virginia Garland.

N these Autumn canyons, red is subordinate to green and yellow. You must search for the touch of scarlet and crimson and when you find it, the bright surprise is more charming for its rarity.

Long sprays of honeysuckle festoon the brush, tipped with clustering scarlet drops. The Red huckleberry bushes are hung with coral beads. The false Solomon's Seal is heavy with large berries. You wonder how the tiny, white flowers that formed its feathery summer plume could so develop in fruiting size. You are always wondering in the woods. If you have lost yourself in the shadowy spell of the forest, you come to the ways of men again with the clear, wide gaze of a child, the crow's feet and the fretting concern washed from your eyes. But if you care more for the personal effect than you do for the deep delight of the woods, the wrinkles and the worry will still be there. *Lose yourself.*

Along the streams, the thin, yellow leaves of Burning Bush shade its pretty, pendant fruit. The outer pink encasing rayed open, from the four sections, attached by frail threads, hang the scarlet swinging seeds. The virulence of poison oak is all forgotten in the delight of its high flaunted red ; a running flame in the cool green

canyons, a girding fire about the lavender grey spruce trunks and the rufous boles of the *Sequoias*. When the sunlight strikes the encircled shafts, an effect of fire glow is given in more than color. The tree appears to smoulder in heat. The wreaths flicker in the wind, moving jets of red play over the bark, and the moted sunshine is a smoky yellow haze that wavers between the red, lapping vines. Near to the tree you smell the pungent odor of warm bark and hot red leaf.

On the open ridges toyon berries are washed in early scarlet. In a month they will be deepest crimson. Here in the park, there will be no plundering hands to take them from their best appointed place.

The madroño's granular berries swing in all shades of red and orange. The curled up funnels of colorful bark are cast down with prodigal carelessness, returned each year to the source from which they came.

The upper limbs twist and twine in young, naked toning. Out of the sunlight and wind and rain the tree will recall its discarded color, recloak itself again in all its burnished beauty. Forever casting off its painted sheathing, flinging itself to the winds, weaving ruddy suggestions into fixed and fiery copper, only to roll up the incomparable hues, to throw them broadcast, starting the color shuttle again upon the first woof of its pale tan texture.

The madroño gives lavishly—it might appear wastefully. Ah, no, it gives wastelessly; it has the secret of giving and taking without stint or limit; putting out measureless expression to profit, that old secret whose

warrant is written in an Ancient Book, "To him that hath shall be given."

A gleam of blue above the moss and fern where clintonia leaves droop upon the earth; their wet smoothness melting into the soil. On the tall stem where once pink lilies hung, a rare fall of lapis lazuli beads. Birds are fond of the blue berries; they are seldom left in ample numbers. Water dogs and snails eat them, too, I believe, for we find the long stems pulled down, laced back and forth to the earth with glutenous threads where the slimy ones have crawled.

And over all, the gentian blue of the Santa Cruz sky, not a distant background in the park. It comes forward here through the forest aisles, outlines the leaves, upholds the flying motif of a bird's wings, circles and sweeps between and around the mosaic designs of meadow, glade, stream and rock, like the azure enamel of a Cloisanné vase. The sight wavers from the receding imagery to the device of the bright circling background.

In the forest, the eye can not always keep the contour of the outlined picture clear, the blue persistent sky is so prominently defined.

If there were no color anywhere in California save in the green of its ever verdant woods, the gold of its sunlight, the blue of its skies, these three vivid hues alone would make it a land of brilliant color. Without the

green and the gold, how intense and wonderful still the peculiar blue shadowed atmosphere, distinctive to the coast. In the East, duller skies and scarlet, orange, purple, crimson autumnal foliage. Throughout the Pacific States, a painted air immersing, changing, glorifying local color—brown to bronze, yellow to gold, leaden to violet, dense to diaphanous, pallid to prismatic, seeping down from the cobalt heavens, an illumined atmosphere that bathes the country in floating, rarified gorgeous dyes.

Fungi Gardens.

By Virginia Garland.

UNDER the fallen foliage is a hidden garden. Brilliant fungi flowers bud, bloom, ripen unseen to most eyes. Stir the matted leaves aside; scarlet and yellow and wine-red *Russulas* stud the soil, indigo blue *Leptonias* brighten the mould.

Some of these toadstools are poisonous, some are edible, but their thatched over color is always a wholesome lure to follow, leading one along a trail of ambushed enchantment. Hunt for a blue or red or golden knob under the thick leaf layers, turn it around and a door opens to happy secret chambers of beauty underground.

Here is a tiny closed pink parasol tinted in palest rose; through the chiffon fabriced folds, the delicate ribs show, pressed down about the stem. This little fungi plant is as fresh and lovely as a wild rose.

There is a small cream colored waxy agaric with the fragrance of some tropical flower. In the temperate dampness of these woods, you catch the odor of a breeze that might be wafting from citrus groves—so heavy and bitter-sweet the perfume.

Along a rotted trunk, hundreds of slanted receptacles filled with a black liquid looking substance, the tip tilted cups, however, never spilling their brimming contents

over. The black watery appearing stuff is as solid as the dull black bowls that hold it.

Infinite shapes, carved spikes, spatulate clubs, queer little spirals, rising from buried spruce cones, red snaky staffs uprearing.

An *Armillaria* brushed with stringy dabs of orange and red, laid on so thick they look like drying paint strokes.

Sometime the color is placed on the cap of fungi plants, sometimes a dull pileus conceals the brilliant hued plates beneath.

Here is a smoky colored cap, a *Cortinarius*; turn it over, the moist gills are so red they look soaked in blood.

Beds of egg yellow *Chanterelles,* toothsome to man and the big grey squirrel and the tawny fox and the fat skunk and coon, growing in abundance for all. Alabaster shells of the oyster mushroom, succulent flutings, tier upon tier, on an alder trunk spanning the stream. Sulphur and orange scallops of Polyporus bracketing the spruce trunks, for all their lurid color, dainty mouthfulls when fresh. They are more than a hundred different varieties of edible toadstools in the park; a full harvest for those who know how to gather and eat; another harvest for those who know how to garner and assimilate color. Sometimes we seem to be wandering on the floor of the ocean. Over the trail sprawl dark leathery starfish forms, —Geasters or earth-stars. White, pink and yellow corals, branch through the cracked wet earth; dainty shells are arrayed under branches. Big *Boleti,* like folded sponges, mussel-shaped black clusters, tendril-rimmed cup fungi,

mimicking ocean anemones; grasses for seaweeds, jewel-eyed salamanders, like slow loitering fish, snails crawling about, a salty tang in the air from the disintregating toadstools and the sound of waves in the pines—one might fancy the earth had become freakish,

> "Working a sea change
> Into something weird and strange."

All these forms, this hidden color is not found in a day. Many walk over the hoarded reserves, scenting only the mould, seeing only some rotting ugly plant, that has pushed high above the leaves out of the cover where its beautiful prime is spent.

Nor is the decay ugly. Under the microscope, curious and pretty spore shapes swim in the dissolving substance. The rich humus of the park is replenished each year by rotting fungi. The waning mushroom is performing a wonderful, beautiful decline—that earth embraced return, which is in reality—restoration, new life.

THE SEQUOIAS.

By Charles Elmer Jenny.

God set seven signs upon this land of ours
To teach, by awe, mankind his wondrous powers ;
A river sweeping broadly to the sea ;
A cataract that thunders ceaselessly ;
A mountain peak that towers in heaven's face ;
A chasm deep-sunk toward the nether place ;
A lake that all the wide horizon fills ;
A pleasant vale set gem-like in the hills ;
And, worthy younger brother of all these,
The great Sequoia, king of all the trees !

A cradle, song, and bed the waters meant ;
The others, playground, grave and monument :
All wonderful, but cold and hard and dead ;
The trees alone, like man, with life are fed,
Like him have felt the stir to rise from earth,
To toil, to strive to heights of greater worth,
To breast the storms and know the north wind's rage,
And pass traditions down from age to age.
O'er four score spans of human life they see,
And whisper of their tales to you and me.

Some men have worshipped 'neath their mighty beams—
Some men have dreamed and told the world their dreams ;
Some men have lain most humbly at their feet
And sunk into the tired child's slumber sweet ;
Some men—men?—have you seen plants wilt and worse,
Their base engirdled by the cutworm's curse?—
Such men with axe and saw have gnawed and gnawed
And felled to earth what never back to God
Their lives can raise—nor sons, nor grandsons raise,
Through penance of a thousand arbor days.

Bird Life in the Park.

By Virginia Garland.

ALONG any trail in the park, you will be sure to meet three large scratching birds—the California Towhee, the Spurred Towhee and the California Thrasher—mowing the dirt aside with his sickle bill.

Two of these birds are brown; the Thrasher has a long body, a great curved bill; the California Towhee is fluffy and fat, with a short bill. The Spurred Towhee is black headed, white and brick-red breasted, and he has decidedly red eyes, mildly pretty eyes for all their ruby glitter. The Thrasher's note is "quoy quoy," with an upward inflection; the Spurred Towhee calls "to-hee′, to-hee′," accent on the last syllable ; the California Towhee or Chewink says his name shortly, emphasis on the first syllable—"che′ wink."

The bright colored Towhee's song is a peculiar vibrant trill on a descending scale, but so burred over it seems to sound on one note. The brown Towhee has a rather thin roundelay like shallow water gurgling about a stone, but the Thrasher is a marvelous singer, cousin he is to the Mocking-bird. No two birds sing quite alike, and they do not sing very often, so if you hear his rare performance some early, very early, Spring morning, that day is always set a little apart. Sweet, irregular phrasing, interspersed with drawling calls. You will not question

what bird is singing, if you have learned the peculiar timbre of his "quoy."

Now turn your attention to three sparrows, about the size of the English sparrow of town streets. The White Crown, the Golden Crown and the Point Pinos Junco. Their call notes are much alike, a clicking note resembling the urge we make to horses between closed teeth. The first two birds are plump and greyish, white stripes between black on the crown of one, dull yellow streaks with the black on the head of the other.

The Junco is smaller, black headed, greyish buff on his breast, and he shows a white flit of feathers, on the fanned out margin of his tail—his song a sunny warble. The White Crown sings the year around: two descending notes, followed by a triplet trill. He sings also in the night. In the moonlight or in the dark silence, his sudden rippling cadence overflows as if he was so full of music that it burst out of him in his sleep without conscious volition. The Golden Crown sings three descending notes, plaintively sweet. These six birds are resident wherever they are found in California.

If, when your visit to the park comes to a close, you have learned to identify these little brothers of the air, school-teacher, parent, laborer, or professional man or woman, you will carry away in your heart a lesson of infinite value. If you can say with authority, "There is a Junco—see the white flit of his tail; there is the Spurred red-eyed Towhee. Hark, a Thrasher is singing in the thicket," or if far away from the woods, you speak of the

California Towhee, the White Crown and Golden Crown Sparrow, you will never find the words come amiss, no matter when, how or where, you essay to use them.

We know that meadow larks do not frequent deep canyons, that blue birds do not build in the reeds by the river, but in learning to identify less common birds, we often forget that locality will help us to find their names as well as color and shape. And this, while it simplifies the search for classification, doubles and trebles our enjoyment of the woods and fields. The labor of scientific arrangement would be rather profitless if we did not absorb a part of the beauty of the outdoors with our task. When we make note of a bird's food, his manner of procuring it, his way of flying and so forth, we learn also something of insect life, something of the flora of a region, something of the loveliness of space, in which different landscapes are set. With the distinguishing range of a bird's habitat, we notice a hundred delightful things, that follow and surround and lure us on in the search for his name.

When walking over rocky, treeless, sun warmed slopes, and a little metallic songed wren bobs up and down on an outcropping stone, you will know him for the Rock Wren ; you will not confuse him with the Cañon Wren and you have a clear impression of the region he lives in; the rise of granite against the sky connected by curved lines of exposed sun beaten soil.

You see where his range ends down in the bushy hollows, or where the cool dark forests begin.

He disappears in a crevice of the noduled stone, creeping through a crack he knows; there he is again, bowing and singing on a distant rock. So you come to see the beauty that lies upon grey stones, the blue shadows that circle them, the crumbly dabs of rust-red lichens and the flat spreading grey green lichens that color them over. The Rock Wren will open your eyes, to more than his mere name and habits. A vague undefined and undefining enjoyment of Nature gives but small reward. We seem to be so constituted that idle dreaming is seldom beneficial. It may be even dangerous to enter the realm of the Open without some obvious thread to guide us, some search to quicken our perceptions. You find this little grey brown wren, with a black band across his tail, has a somewhat flinty tinkle in his song and you begin to understand how close is the association between sound and matter; how unconsciously the birds are forever interpreting and echoing what they hear and see. The wind infringes upon this hard rock strewn, barren ground with a hot, monotonous sweep, and the Rock Wren, hearing nothing but the whiff of breezes blowing through the unyielding cracks and runways of his stony haunts, sings a stiff, wheezy little lay that seems to fairly crackle with cheerful heat.

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Doubtless when you think of a wren, you picture a small bird with short wings and tip tilted tail, but the big Mocking-bird, the Catbird and the Thrashers all belong

to the wren family. The California Thrasher has among some others, four little kinsfolk in the Big Basin, the Rock Wren, the Cañon Wren, Vigor's Wren and the Winter Wren.

The Dotted Cañon Wren is described by his name. If you add the White Throated Dotted Cañon Wren, his image and locality is clearly impressed upon your mind, and you will surely know when you meet him on the banks of a deep ravine. What would you expect to hear in his song? Not the crisp, sunny, metallic music of the Rock Wren. Among all the sounds of his habitat, he hears most distinctly the drop and flow of water plashing down the center of the cool ravine, and his song runs as liquidly clear, through often louder tones, as the voice of the stream penetrates below and above, all the inarticulate sounds of the forest. His song pours out of him in seven or nine descending notes, ending in a round purling, eddying trill. Sometimes he closes his refrain by doubling back on the first notes, a sweet, wild recoil of fluent tones, reproducing the duplex bubble of swift water reverting upon itself. He has been called the "Bugler," and this quick rebound of coiling notes is not unlike the back winding, rallying call of some elfin horn.

All the small wrens have very similar call notes, harsh syllables which sound like "crick crick," in alarm running together in a long scolding clatter. How unlike the calm, questioning "quoy quoy" of the big Thrasher.

Vigor's Wren you are likely to find everywhere about village houses or in the far forests. He is another fine singer, a mimic, too, for mockery is a strong characteristic of the wren family.

But in the wilderness of the Basin, there are many melodies as sincere and joyous as his simple little strain, and there his song has a richer quality, a more ebullient rise and fall. In the way of wrens, he often reverses his song, sometimes beginning and again ending with tumbling grace notes. Vigor's Wren is silver breasted, dark brown on the upper part of his body, lighter beneath; a long, narrow white line curves over his eye.

And now we come to the tiny Winter Wren, the smallest wren in the West, perhaps the smallest in the world, certainly in the park, living among the largest trees in the universe. A brown, shadowy mite, difficult to see, flickering in and out of the prostrate boles. Look for him on the ground, never in the high branches. He is also dotted and barred, but you will not confuse him with the Cañon Wren, if you have said to yourself "the White Throated Dotted Cañon Wren"—he is so much smaller and has no soft white patch under his chin. His call note is a faint, short "click," but his song is so clear and loud, it sounds out of proportion with the stubby tailed wee creature, and it has also a wandering, meandering quality that seems to carry it up and down and far away from the feathered midget, delving in the depths about a mossy log.

A strange breathless song cut off quickly without an ending cadence, as if some sudden interruption had caused the singer to shut his bill and swallow his notes in half a second. Back and forth on rapid tones he sings, with no rests between, rising and falling into different keys, with a movement that sounds blown up and down by the swell and drift of the wind, not controlled by the bird, and ceasing as if a stone wall had come between you and the singer, leaving you with the thought that the cool, breezy zigzag is continuing, as the wind goes around a buttressing hill out of hearing.

Perhaps in a week or a month, it may be in a year, you will learn the names, localities and manners of ten birds. You have not lost time if it takes you twelve months to know these few, for no moment given to the woods and fields is ever lost.

You may start out to find a bird and find a river in its stead. You may hunt for a common ground bird and be given the sight of a flock of rare warblers feeding in the top spires of a spruce. You may return home without a bird adventure, a friendly talk with some staunch oak to your credit instead. In looking for the region of certain birds, you may lose sight of the bird entirely and see as you have never seen before the beauty of alders marching in a winding procession along the river margin, the bosomed curve of bare hills, or the sun flecked turn of forest trails. As you seek your heart and mind will be filled. The bird or bee or butterfly you trail may be hid-

den, but other visions crowd into its place. For no asking hour is left void in the Open.

In some shut in day, say your five sparrows and your five wrens over, with descriptive adjectives.

SPARROW FAMILY.

The White Crowned Sparrow.
The Golden Crowned Sparrow.
The Black-headed Point Pinos Junco.
The fat, fluffy, big brown California Towhee.
The red and black and white red-eyed Spurred Towhee.

WREN FAMILY.

The big, brown, sickle-billed California Thrasher.
The small, greyish, black-banded tail Rock Wren.
The brown, White Throated Dotted Cañon Wren.
The silver breasted, white eye-browed, brown Vigor's Wren.
The wee, brown, shadowy Winter Wren.

With these names will come the uplift of rocky mesas, the far leafy paths of the woods, the cool ramparted cañons, wayside thickets, stretches of chaparrel, and the mossy shrines, in the distant redwoods.

The Green People.

By Virginia Garland.

LL over the park, birds, waterfalls, canyons, hills, shrubs, and trees, are gradually learning a new sympathy with mankind. The mighty redwoods no longer stand in aloof austerity. Here and there certain trees have not yet unbent; their towering branches are heavy with an ancient sighing that makes moan for the days of long ago, but for the most part the trees have responded to new kindly influences. Whether we imagine this or not is of small matter since our protective attitude has brought about a change in us which conceives their change possible. The trees in the park are guarded, and one result is our better understanding of and a closer communion with Nature. Are these trees, inanimate, unfeeling, or are we too often obtuse, unfeeling toward them?

Stand in the sad, sold woods of Oregon, the dark and doomed forests of northern California, and the most stolid feel a reflex impression of unconquerable gloom. This depression is not all climatic, for the National Parks in the same territory lack in an appreciable degree the heavy melancholy that lies over betrayed woods.

Even the men who gloat upon the wealth this timber brings hurry away from a nameless dread they feel, but which they would hardly acknowledge as coming from

the trees. And with those who must labor year after year in the lumber camps, there is more insanity than among any other class of outdoor workers.

When quite outside of our knowledge of commercial conditions, of what fate hangs over the forest, we are in the main made sad in some woods, and soothed and cheered in others; are we far from the truth in thinking that the trees directly incite our mood and that their mood is influenced by conditions we impose upon them? The forces that breathe from a tree are as complex as the forces that breathe from a human being.

It is not easy to keep the logical sense between cause and effect clear and true in studying humanity. It sometimes happens that we make out our own kind to be strange, unreal, inhuman with the best philanthropic motives. How much more difficult to see and hear the Green People aright whose wordless protest, whose speechless assent reaches only that fine far inner sense of vision and hearing.

We know that forests in the mass have a direct bearing upon rainfall and weather, as we know that the rise and fall of nations affect prosperity in certain result; but when we refine our reasoning upon the unseen agencies that act through individual trees, or upon the invisible powers that bear from one human medium to another, we are in a realm of conjecture that might be called imaginary no less in one than the other instance, but which signifies further, deeper, more intrinsically than some unimpeachable argument of merely material interaction.

We once thought good forestry only a matter of sentiment. We are finding that State and National Parks have their physical and moral as well as esthetic value. The pleading, the threatening, of outraged Nature is interpreted by the poet long before the idea works its way into the hard utilitarian brain. So if some of us hear the trees speak, hear their long wailing call when they go down under the axe, hear the answering battle cry of sky and sea, hear their beneficent murmur, their rustling benediction when they are loved and cherished, we are not idle visionaries. The day is coming in the near future when the reckoning, controlling, practical portion of humanity will recognize that the life of a tree is a different expression of and stupendous factor in the life of the whole world. When we destroy our forests, we fling war into the teeth of the elements, that army whose rank and file we are indeed ill fitted to battle with; when we separate and deaden the soul of a tree, we are segregating and making void just so much power in our own spiritual growth.

The trees in Sempervirens Park are looking down on a different manner of men; workers who delve about their mighty roots, clearing away restricting litter, opening paths along the streams, freeing the choked water, tender of the tiniest vine, regardful of every mossy patch and ferny corner, removing only the cumbering rubbage. A labor of elimination that does not destroy but which clears, opens, reveals.

The great trees know the tangled native plants will not be margined by silly box borders. The madroño and oak will lean to the Redwoods' sky touching shafts unfretted by the dissonance of foreign trees. What is left of the wilderness of the park will remain as it was planted before the Pharaohs and the miracle of that companion summoned wreathing and arboring in which man has had no hand, will continue. For the men and women into whose care this wonderful domain has come, know that there is no landscape gardener like Nature, no planting possible that can excel the exuberant, infinite sowing of the sun and wind and rain. The calling of the redwoods, the answering of the elements will go on without the bungling interference of humanity.

As a road is leveled and strengthened about the contour of the hills, the birds will drop along its bare margin a twined line of beauty; purple thistles and feathery fireweed and the first transverse sprays of blackberry vine will use these as a support, until their runners are sufficiently vigorous and the thorny mound rests upon its own strong arches.

When the dead brush is taken from a shady dell, oxalis and wood violet and vancouveria will quickly carpet the hollow. Where a lifeless jagged limb obstructs the view, breaking the jutting curve of stony banks and is lowered to its earth place, the engraver beetle will trace thereon his pretty biting etchings, the rotting trunks will soon be absorbed in living moss and lichen.

Through stony cliffs cut and laid bare, the rock break-

ing saxifrage will push and heave hanging rosetted festoons from every crevice.

Following close upon the removing, invoking toil of men, an answering principle in the fecund earth, covering over, renewing, restoring out of the boundless mystery of Life.

* * *

And the great trees watch and wonder much. Surely a new race is coming on down there; men who measure their girth in love, not in greed, taking the place of creatures they used to dread more than rot and disease, more than the wrecking fateful winds, more than the blasting, consuming fires.

Through their branches the almost unbelievable message runs—"These men worship God with us."

THE TREES OF EDEN.

AN INVOCATION.

And God said, let the earth bring forth grass, and the herb yielding seed and the fruit tree yielding fruit. * * *

And the evening and the morning were the third day. * * *

And the Lord God planted a garden eastward in Eden. * * *

And out of the ground made the Lord God to grow every tree that is pleasant to the sight, and good for food. * * *

And the Lord God took the man, and put him in the garden of Eden to dress it and to keep it.

BY JOAQUIN MILLER.

Behold this miracle, the tree,
  The third day's miracle, behold
What stateliness, what majesty,
  What comeliness, contour, what mold
Of limb, of leaf, of arms in air
  High held in attitude of prayer.

And yet we hew, and slash and slay
  God's first born, "pleasant to the sight,"
And set, ere he laid hand to clay
  And fashioned man to burn and blight.
We see no grace at all: behold
  We only see the sodden gold.

The sweet name Nazareth means wood.
  The Christ companied with the trees;
He read their leaves, he understood;
  His alphabet the birds and bees.
Give us, oh God, to heed, to hear,
  To love, to cherish, to revere.

Give us to heed how clean, how tall;
  Give us like courage, patience, strength,
To front the four winds, strength to fall
  Serene and satisfied, full length
And full of years and majesty,
  As falls thine Eden fashioned tree.

The Chieftain.

The Redwood.

STATE FORESTER HOMANS officially describes the redwood in these terms:

Under normal conditions of growth the redwood develops a long, cylindrical bole, clear for two thirds of its length, and surmounted by a narrow, tapering crown. Exceptional trees have measured 350 feet in height and 20 feet in diameter.

Average dimensions of the trees customarily logged are 200 to 275 feet in height, and 3 to 10 feet in diameter, and their ages run from four hundred to eight hundred years.

In early life, the redwood grows rapidly both in height and diameter. Later, the growth falls off, and in old age is extremely slow. Instances are not rare of an old redwood increasing in diameter only six inches in the last three hundred years.

Though a fairly prolific seed bearer the redwood rarely reproduces itself by a seed. It sprouts readily from the stump and root-collar, and suckers from the roots ; and it is probable that the majority of trees now forming the forest originated in this way.

This power of reproduction from sprouts is a property denied to conifers in general.

Another writer says of this process:

When the deadly axe has felled a stately redwood, when the "tree" has disappeared, the massive stump sends up from its circumference a fringe of shoots that grow to saplings, and they to trees, that in the lifetime of a man absorb the growth that gave them birth, and in a few decades they tower—a ring of

comely "giants"—with interlocking branches shading their ancestral birthplace and grave.

The tree has very few enemies, and is well protected against them. The thickness of its bark make it invulnerable to all but the hottest fires, and its wood, also, containing no resin does not burn easily. Very few fungous diseases are dangerous to it.

The vitality of the tree is also remarkable. It not only lives to an astonishing age, but after being cut it sprouts repeatedly, using the quantities of nourishment stored in the enormous roots. And although successive forest fires will finally kill the stump, it will remain in the soil indefinitely without rotting.

Redwood bark is of a reddish-gray color, fibrous in texture, and gives to full-grown redwoods a fluted appearance.

The wood of the redwood varies greatly. The softest and best trees usually grow in the bottoms, the "flinty" timber occurs on the slopes. But this rule does not always hold good. All sorts of unexpected and unaccountable differences in the quality of the timber occur. A soft, fine-grained tree will be found close beside one "flinty" and less valuable. Even the practical logger is never sure until he cuts it what kind of lumber a redwood will yield. The tree's vitality is so great, it endures so many vicissitudes and suffers from so many accidents in the centuries of its existence, that the grain of its wood becomes uneven in proportion as its life has been eventful. The wood fibers formed under different rates of growth sometimes get up a tension so great that when the log is sawed the wood splits with a loud report.

In color redwood lumber shades from light cherry to dark mahogany. It is easily worked, takes a beautiful polish, and is one of the most durable of the coniferous woods of California. It resists decay so well that trees which have lain 500 years in the forest have been sent to the mill and sawed into lumber.

Ante-dating History.

"The redwood tree is interesting for its size," says Professor Sargent, "but it is more interesting as the sole representative, with the allied species of the Sierras, of a race of giant trees which before the glacial period were widely spread over the northern hemisphere."

While it is true that no specimen of the *Sequoia* family has been found in any part of the globe except California, and in limited areas here, it is claimed that it has been discovered in a fossil state on Disco Island in Baffin's Bay, far within the Arctic circle.

Among the relics of the cave man that have been found in Europe are pieces of redwood trees.

The petrified forests of Arizona are supposed to be remains of *Sequoia* forests which "went down to the primeval sea," were covered with sandstone and rose again.

Discovery and Name.

Discovered at an unknown early date, the coast redwood was first described and published by Lambert of London in 1803, under the name of *Taxodium sempervirens*—he thinking the trees formed another species of the well known *Taxodium* or bald cypress of the Eastern States.

In 1847 Endlicher, a German botanist, believing that it was a distinct genus, published it under the name of *Sequoia*. This author, contrary to custom, omitted to

give the origin of his name, and botanists have conjectured that it was intended to commemorate "Sequoyah," a half-breed Cherokee Indian, who, all by himself, invented an alphabet and taught it to his tribe by writing it upon leaves. This alphabet came into general use among the Cherokees before the white man had any knowledge of it. In 1828 a periodical was published in it by the missionaries. Sequo Yah was banished from his home in Alabama with the rest of the tribe and settled in New Mexico, where he died in 1843.

Sequo Yah's alphabet consisted of eighty-five characters, one for each sound in the language; and it was so simple that in a few weeks a Cherokee could learn to read and write. Some philologists pronounce it the most perfect alphabet ever invented.

It seemed fitting that the redwood should be named for the red man, yet Prof. J. G. Lemmon and others consider it to have been derived from sequor (to follow) alluding to the fact that our redwoods are the followers of a vanishing prodigious race, which Prof. Lemmon considers a much more appropriate and pleasing origin for the botanical name of our monster tree.

Age.

Prof. B. E. Fernow is probably the foremost authority in forestry in this hemisphere, if not in the world. He is a very highly educated German, and was connected with the Department of Forestry in the German Empire, later head of that department in the State of New York, and

professor in Cornell; and is now at the head of the Department of Forestry in the Dominion of Canada, and a professor in the University of Toronto.

Professor Fernow spent some time a few years ago in this forest. He said that it was impossible to determine with any degree of certainty its age; that the usual tests, such as counting the rings, and the like, were misleading and untrustworthy.

His own estimate was that two thousand years was the probable limit of the age of the oldest of the trees. Possibly, but not at all probably, some specimens might be older. At the same time, he did not profess to speak with certainty or assurance.

The count of rings on a redwood tree recently felled in another part of the State showed that the tree began life 525 B. C.

Some years ago, the late Prof. William Russell Dudley, of Stanford University, wrote a life history of a redwood. The tree in question was one of moderate size, about fifteen feet in diameter, five feet from the ground. It was 270 feet in height and 2,171 years old. The history of the tree was as follows:

B. C. 271 it began its existence. The first year of the Christian era it was about four feet in diameter about the base. A. D. 245, at 516 years of age, a burning three feet wide occurred on the trunk. One hundred and five years were occupied in covering this wound with new tissue. For 1,196 years no further injuries were registered. A. D. 1441, at 1,712 years of age, the tree was burned a second time, in two long grooves, one and two feet wide, respectively. Each had its own system of repair.

One hundred and thirty-nine years of growth followed, including the time of covering the wounds. A. D. 1580, at 1,851 years of age, occurred another fire, causing a burn on the trunk two feet wide, which took fifty-six years to cover with new tissue. Two hundred and seventeen years of growth followed this burn. A. D. 1797, when the tree was 2,068 years old, a tremendous fire attacked it, burning a great sear eighteen feet wide. One hundred and three years enabled the tree to reduce the exposed area of the burn to about fourteen feet in width.

Other Aged Trees.

There is a famous plane-tree in the Ægean island of Cos which is said to be at least a thousand years old. But it is said that there is in Europe no tree that can be proved to be more than eight hundred years old. The tree from which is said to have glanced the arrow that slew William Rufus in the New Forest was in existence in the eighteenth century, when it was replaced by a stone in 1745.

The Tortworth chestnut—supposed to have been formed by a junction of two trees—was mentioned as a boundary mark in a record of the year 1135. The Swilear Lawn oak in Needwood Forest is proved by documents to have been at least six hundred years old.

An oak at Tilford, near Farnham, is supposed to have been referred to in a charter granted by Henry de Blois in 1256.

These are some of the tallest trees in Britain: the "Queen Beech" at Askridge Park, 135 feet high; the silver firs at Luss, Loch Lomond, 121 feet high; and some beeches near Glasgow, which are 118 feet high.

Non-inflammable.

Redwood lumber contains no resin or turpentine of any kind, and owing to its great resistant qualities of severe climatic conditions, is free from cracking or decay, where cinders might lodge and start fires. When burning it is easily extinguished with a small quantity of water and has the appearance of burned cork, and is harder to ignite a second time than at first. When the famous Baldwin Hotel of San Francisco was burned in the most densely populated part of the city, the firemen confined the flames to the building only; and while the heat in the interior of the building was sufficient to melt cast iron, the weather boarding (which was of redwood), by applying the hose to the outside walls, remained almost intact when the fire had been extinguished within, after it had burned fiercely for five hours.

At the time of the destruction of San Francisco by fire following the earthquake of 1906, the Southern Pacific Railroad Company saved their depot and yards, built of redwood lumber, south of Townsend street, with their own employees and private fire-fighting facilities.

Redwood forests are practically unharmed by forest fires, and it is common practice for the lumbermen to fell the trees and peel the bark from them and, when the dry season is on, set fire to the felled timber and burn the branches and bark and other wreckage without practical injury to the saw logs, which procedure would mean disaster to any other wood.

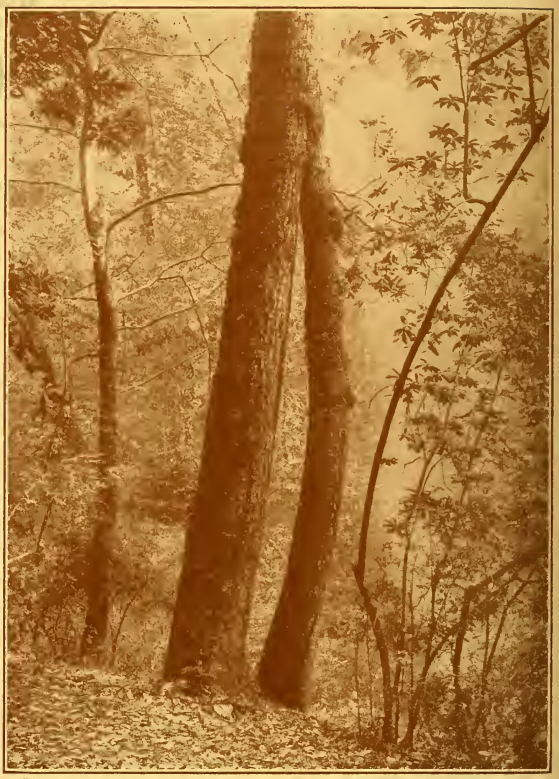

Photo by Hill.

United Oaks.

Sentiment and Shingles.

WHEN Theodore Roosevelt first stood under the shadow of a redwood, he said:

Here you have some of the great wonders of the world. You have a singularly beautiful landscape, singularly beautiful and singularly majestic scenery, and it should certainly be your aim to try and preserve that beauty and keep unmarred that majesty. There is nothing more practical in the end than the preservation of beauty which appeals to the higher of mankind. Take a big tree whose architect has been the ages, anything that man does toward it may hurt it and cannot help it. I feel most emphatically that we should not turn a tree which was old when the first Egyptian conqueror penetrated to the valley of the Euphrates—into shingles.

That same season a single tree within six miles of where Mr. Roosevelt stood was converted into shingles, with the result: Yield of tree—66,000 shakes, which sold for $14 per 1,000, and 300 railroad ties, which sold for 38 cents each.

To give reader and visitor an estimate or basis of comparison, it may be stated that the tree at the Governor's Camp, sometimes called "The Daughter of the Forest" and sometimes the "Princess," is what the timbermen call a good shake tree, and it is calculated that it would yield about 60,000 shakes.

Commercially-minded men find it difficult to compute a sentimental value in excess of these figures, yet cash put into a cathedral could not produce the sanctuary effect of these upward shafts that blend the heavens and the earth.

Tributes to These Trees.

NOTABLE among the word-paintings drawn of this forest, is the one wrought by D. M. Delmas, and delivered before the Legislature at the time the bill was pending for the purchase of the park. Previous to its delivery Mr. Delmas had spent several days in the Big Basin.

In the heart of the Santa Cruz Range this chosen spot is found. It presents to the eye the aspect of a vast amphitheater whose encircling walls are the dim heights of mist-crowned mountains. Seen from the crest of the ridge it stretches toward the setting sun, its distant outlines blending the purplish-blue tints of the woods with the hazy vapors of the ocean. From this point of view you catch a confused suggestion of a great forest watered by intersecting streams. Descend from your eminence and enter within the limits of the forest. Your first feeling is one of awe. Your very breath seems hushed by the solemn stillness of the place. Here the winds are mute. Their distant murmurings are unheard within the depths of the shaded solitude. Your step falls noiseless upon the thick carpet of marl—the cast-off vesture of countless seasons—upon which you tread. The crackling of a twig under your foot or the startled cry of a frightened bird but intensifies the silence which enfolds you like a shroud. Contemplate now the scene spread on every hand in never-ending vistas. See the great moss-covered oak, the light and graceful maple, the glossy laurel, everywhere entwining their branches and blending the varied hues of their foliage in tangled profusion, while here and there the glistening trunks of clustered madroños stand out against the dark background like streaks of yellow sunlight. As you lift up your eyes, behold above the giant forms that sentinel the place. These are California's own—hers, for in no other soil

have they ever found root and under no other breeze save that of the Pacific have they ever swayed their boughs.

A sense of humility overwhelms you as you gaze upon these massy pillars of Nature's temple, whose tops, lost amid the clouds, seem to support the vault of the blue empyrean. The spell which the mystic light of some venerable cathedral may at times have thrown upon your soul is tame compared to that which binds you here. That was man's place of worship; this is God's. In the presence of these titanic offsprings of Nature, standing before you in the hoar austerity of centuries, how dwarfed seems your being, how fleeting your existence! They were here when you were born; and though you allow your thoughts to go back on the wings of imagination to your remotest ancestry, you realize that they were here when your first forefather had his being. All human work which you have seen or conceived of is recent in comparison. Time has not changed them since Columbus first erected an altar upon this continent, nor since Titus builded the walls of the Flavian amphitheater, nor since Solomon laid the foundations of the temple at Jerusalem. They were old when Moses led the children of Israel to the promised land, or when Egyptian monarchs piled up the pyramids and bade the Sphinx gaze with eyes of perpetual sadness over the desert sands of the Valley of the Nile. And if their great mother, Nature, is permitted still to protect them, here they will stand defying time when not a stone of this capitol is left to mark the spot on which it now stands, and its very existence may have faded into the mists of tradition.

David Starr Jordan, President of Stanford University, has said:

California Redwood Park is a leaf from the greatest of virgin forests, a sample of the redwoods as they have been for ten thousand years, and one which may be preserved for all times.

Besides this, it is a botanical garden where the wax myrtle, the California nutmeg tree, the California whortleberry, the clintonia, the oxalis, and all the other plants which follow the redwoods may be likewise saved for our descendants.

United States Senator Perkins has said:

I have traveled through the forests of Mariposa, and I have driven through the wonderful forests of southern Germany, yet I have never seen the equal of California Redwood Park.

In some unknown way this forest has come down to us from probably the pliocene age, bringing with it in all its native loveliness and primeval beauty its flora, consisting of its giant trees of sempervirens and embracing some fifty-two varieties of other trees. According to botanists, the Big Basin contains no moraine, neither lateral nor terminal, which clearly shows that it has not been at remote periods even visited by glacial action, and proves it to be of primeval origin and one of the oldest spots known to man.

Surrounded by its great mountain rim, protected for unknown ages, it comes to us as a heritage from God, and in all its weird aspect it gladdens the heart, inspires the mind with the thoughts of the boundless powers of the Creator, and as we stand gazing at the giant trees, massive, tall, stately and grand, we are tempted to exclaim "They are the real temple of God!" We see in them the key to every church tower, and the lines and angles of our famed gothic architecture.

By G. Frederick Schurtz: "The beauty of the forest is not simply in character, but is due to many separate

sources. The trees contribute much ; the shrubs, the rocks, the mosses play their part; the purity of the air, the forest silence; the music of wind in the trees—these and other influences combine to produce woodland beauty and charm."

Although John Burroughs was never in the forest, he delineates it perfectly when in one of his essays he says: "The book of nature is like a page written over or printed upon with different sized characters, and in many different languages, interlined and crosslined, and with a great variety of marginal notes and references."

Photo by Hill.

Pine and Oak.

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Saving for Posterity the World's Finest Forest

A statement by the Save-the-Redwoods League for 1925-26

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Looking from North Dyerville Flat across the South Fork of the Eel River toward Bull Creek Flat. A typical scene in the projected Redwood reservation of national significance.

Saving for Posterity
the World's Finest Forest

An account of the great Redwood reservation to be established in the Dyerville-Bull Creek region, together with the annual report of the Save-the-Redwoods League for 1925-26

"THE most important conservation project in America." That is the judgment of Dr. John C. Merriam of the Carnegie Institution of Washington, D. C., and of many other men prominent nationally, regarding the plan to establish, in the Dyerville-Bull Creek region, Humboldt County, California, a great Redwood Forest Reservation, of national significance, comprising close to 12,000 acres of the finest primeval Redwood forest, and involving an ultimate expenditure of several million dollars.

Drury

On the left, North Dyerville Flat. On the right, Bull Creek Flat. At the center, the mouth of Bull Creek where it enters the South Fork of the Eel River.

Drury

Looking toward the headwaters of the South Fork of Bull Creek. This view gives some conception of the "back country" to be included in the projected Redwood reservation.

League's Chief Accomplishment in 1925 The formulating of this project, and the beginning of negotiations with the owners, whereby this outstanding area of primeval forest may be saved, represents the chief accomplishment of the Save-the-Redwoods League in 1925, and presents its major objective for 1926.

Plan Represents 7 Years' Study This project is the fruit of over 7 years of careful study and negotiation by officials of the League with the co-operation of experts in every phase of forestry and recreational affairs. It is with deep satisfaction that the League presents to its members, and to the public, the plans for this large Redwood reservation.

Negotiations for Purchase Started Negotiations are now going on with the owners, and once the price is fixed a plan of financing will be outlined. Further details about the Dyerville-Bull Creek project are given on page 16 and maps showing its location in relation to the rest of the Redwood Belt appear on pages 12 to 15 in this report.

Raising of Funds Under Way While the League has ahead of it the task of obtaining several million dollars for this great reservation, it has the satisfaction of knowing that the raising of funds is well under way. An amount in excess of three quarters of a million dollars was announced to be in hand for this purpose in the last report of the League.

Dr. John C. Merriam, President of the League, on pages 10 and 11 of this report, suggests a "Balanced Program," taking into account all interests involved in the movement to save the Redwoods.

Drury

On the Smith River, Del Norte County, California, in the proposed Smith River-Mill Creek Park. Four miles of this beautiful stream would be included in the park.

Gift of Edward S. Harkness And just before this present report was prepared, Mr. Edward S. Harkness of New York generously made a gift of $50,000. Furthermore, a fund of $40,000 was completed in 1925 by the California State Federation of Women's Clubs, and they intend to apply it in saving a grove within the area decided upon. The League is greatly encouraged by the rate at which contributions are already coming in.

Smith River—Mill Creek Park Planned In Del Norte County, on the Smith River, a second park project was decided upon in 1925. It comprises about 1000 acres on the Redwood Highway five miles north of Crescent City, and, taking in a stretch of about four miles of the picturesque Smith River, as well as the celebrated Mill Creek Flat, this smaller park affords remarkable scenic and recreational opportunities. Because of its nearness, it is of especial interest to the people of Del Norte County, and of the state of Oregon, although it will be on the same plane as the Bull Creek-Dyerville area as an attraction of nation-wide importance.

Del Norte Supervisors Support Park This park has the strong support of the Supervisors of Del Norte County, who have already appropriated $5000, and have signified a desire to appropriate more for such a purpose. A leading citizen of Crescent City, Mr. Jacob Morhoffer, has just contributed $1000, to aid the new enterprise. The lumber companies whose properties are involved are co-operating in the formulation of plans for this park.

"Does the Public Want It" is the title of a remarkable editorial on the League's two major projects, appearing in the Saturday Evening Post of January 9, 1926. Reprinted on pages 18 and 19 of this report.

Definite Objectives for 1926 The position of the League is thus strengthened by the fact that it has a definite program involving two major projects, the Dyerville-Bull Creek Reservation and the Mill Creek-Smith River Park, with actual funds in hand toward each. Members of the League can feel that it has been their support that has led to these definite accomplishments. Their further help will lead to complete realization of these ambitious but entirely feasible plans for saving these finest examples of the most majestic and ancient family of trees.

Humboldt County Preserves Grove Meanwhile, activity to preserve the scenic beauty of the Redwood Highway—one of the most unique routes in the world—has progressed during 1925, and will continue. The Supervisors of Humboldt County, in March of the past year, purchased for $40,000 the tract of 160 acres known as the Roberts claim, half a mile north of the Humboldt Pioneer Memorial Grove near Orick (see map on page 15). This beautiful grove of giant trees, directly on the Redwood Highway, contains eighteen million feet of virgin Redwood timber. The Humboldt Supervisors in this and other acts have shown a deep appreciation of the significance of the Save-the-Redwoods movement. Their appropriations for preserving Redwood groves between 1919 and 1926 total $125,000.

Further Gifts from George Frederick Schwarz Important additions to existing parks along the Redwood Highway have been made possible during the past year by further gifts, totalling approximately $5000, from Mr. George Frederick Schwarz of New York. These include a tract of eighty acres adjoining the Richardson Grove, which brings within the State Park System a considerable stretch of the South Fork of the Eel River and includes a very fine bathing beach, thus adding greatly to the recreational value of this area. This new park tract is to be named in honor of Professor James W. Toumey of Yale University. Including gifts toward the Henry S. Graves Redwood Grove, Mr. Schwarz has donated in 1925 and 1926 a total of approximately $20,000.

Henry S. Graves Grove Dedicated Appreciation of the League's efforts and of Mr. Schwarz' generosity in establishing the Henry S. Graves Grove was expressed at the formal public dedication of this tract on Sunday, September 6th, 1925. The speakers were: Hon. Clarence F. Lea, member of Congress, Mr. H. W. Cole, manager of the Little River Redwood Company, Mr. M. B. Pratt, State Forester, Mr. West Duley, Chairman of the Del Norte Supervisors and Mr. Newton B. Drury, Secretary of the League. Despite the fact that it was raining gently, a good-sized gathering of supporters of the League attended. While Colonel Graves was unable to be present at the dedication, he had made a tour of the Redwood region earlier in the summer and had seen the beautiful grove named in his honor. A message from Mr. Schwarz was read to the gathering. Among other things, he said:

"A Most Fitting Tribute" "This tract of ancient forest and picturesque slopes is to be known as the Henry Solon Graves Redwood Grove. The name, I think, has been most fittingly chosen. Professor Graves

A panoramic map of the Redwood belt, on pages 12 and 13 of this report, shows the strategic location of the proposed Dyerville-Bull Creek reservation in relation to the Redwood Highway, the Northwestern Pacific Railroad, and the present Humboldt State Redwood Park

© Endert

On the Redwood Highway in the Smith River-Mill Creek region, where a park of from 700 to 1000 acres is projected.

was one of the pioneers who laid the foundations of forestry in this country, and his deep interest and clear insight into the needs and problems of our National and State Parks is well known. A Chief of the United States Forest Service for a decade, distinguished as a Colonel in the World War for his services in having organized our forestry forces in France, and for some years a Director of the Forest School of Yale University, he has devoted thirty years to his profession in a succession of brilliant accomplishments. So I think the name Henry S. Graves augurs well for the future welfare and lasting beneficent influences of these stately groves.

Redwoods "Too Great to Understand" "And in closing I would express what I think those present may feel,—that it is our hope that this lovely work of the Creator may continue for many generations to bring happiness, health and inspiration to those who may linger for a while among these remarkable trees, looking out here over the great Pacific, so noble in stature, of great age, but still so beautiful. Sometimes it has, indeed, seemed to me as if a strange mystery lay hidden within their sunlit crowns and among the deep shadows of their massive boles, as if they were too great for us fully to understand."

Lumber Companies Donate Timber Evidence of the spirit of co-operation that exists between the League and the lumber industry is shown in the fact that the Little River Redwood Company of Crannell, California, is this year donating to the State a strip of timber 100 feet wide, along the Redwood Highway between Trinidad and Orick for a distance of approximately nine miles. The strip contains 112 acres. This gift was announced by the manager of the Company, Mr. H. W. Cole, at the Graves Grove dedication. Another concern, the Albion Lumber Company, has given to the State a strip of Redwood on the highway leading to Fort Bragg, in Mendocino County, to be known as the Paul Dimmick Redwood Park. It was dedicated last summer.

Gift by Ward Estate A similar gift by the heirs of the Ward Estate is to be made, along the highway at the approach to the new Douglas Memorial Bridge across the Klamath River, approximately two miles in length and 325 feet wide, and containing seventy-two acres. Deeds to this property are now being prepared.

Native Sons Save Redwood Grove The League is also gratified to announce the establishment of a Redwood park, comprising seventy-five acres, in the Tunitas Glen Canyon, San Mateo County, by the Native Sons of the Golden West.

Progress in Re-forestation Research Definite progress has been made in scientific research on the subject of re-forestation, under Major D. T. Mason, Dr. W. A. Cannon, and Dr. D. T. MacDougal, who were appointed as a special Research Committee of the League and to whom funds have been allocated for their scientific studies.

Park Studies by Landscape Architect A series of reports on the recreational and landscape possibilities in the present State Redwood Parks have been made under the auspices of the League by Mr. Emerson Knight, landscape architect of San Francisco, with a view to assuring the widest use of these parks by the public, with the minimum destruction of their natural attractions.

The State Park Bills The Save - the - Redwoods League has also to report its activity in the matter of endeavoring to secure a coherent State Park policy and plan for California. During 1925 the League joined with other organizations in the State, in formulating and urging the passage of two bills before the Legislature, one sim-

© E. R. Freeman

In the Humboldt State Redwood Park on the South Fork of Eel River. Fifteen miles of park like this along the Redwood Highway have been preserved by the League. The area is capably administered by the State Forestry Board.

plifying the present park administration by creating a central State Park Commission and a second providing for a state-wide survey of available park areas. These bills had the united support of many important organizations, and were passed by both houses of the Legislature with scarcely a dissenting vote. They were vetoed by the Governor.

Need of Coherent Park Plan The campaign for these measures served to bring out the need for a coherent and comprehensive State Park policy in California and it is expected that before the year 1926 has passed, the groups interested in this subject will formulate a plan for a state-wide survey which will be the basis for an ultimate system of State Parks. One step in this direction was the formation, at Los Angeles, of the State Park Association of California, which is co-operating with the League and other organizations in planning for a park survey.

Officials of the League feel strongly that until a uniform park policy is adopted by the State it will not be possible to obtain the maximum support for park and recreational projects, either from our own citizens or from those who are in a position to help throughout the United States.

Official Endorsements of League Program During 1925, the program of the League was given official endorsement from three sources of distinct national importance. In April Dr. Hubert Work, Secretary of the Interior, and Director Stephen T. Mather of the National Park Service visited Bull Creek Flat and the Humboldt State Redwood Park, and at a meeting in Eureka expressed their approval of the work of the League. In July, 1925, the National Conference on Outdoor Recreation officially approved the League's program, and on May 1st, 1925, the Redwood reservation project in the Dyerville-Bull Creek region was endorsed by a meeting of representatives from the American Forestry Association, National Parks Association, National Conference on State Parks, and National Conference on Parks, Forests and Wild Life.

Popular Support of League Grows Each year has seen more wide-spread interest in the Redwoods as one of the natural wonders of the world and greater travel over the Redwood Highway because of its beauty and picturesqueness and the remarkable diversity of its recreational opportunities. The Redwood Highway Association, composed of civic and commercial bodies throughout the Redwood Belt, has been increasingly active during the past year. The membership of the Save-the-Redwoods League has shown a substantial growth, the total now being over 5200. Wide-spread national publicity has been given to the movement during the year, by both newspapers and magazines. Notable among the articles appearing was the series by Albert W. Atwood, "Redwood Dividends," in the *Saturday Evening Post.*

Fairness to Lumber Industry These articles were commented upon most favorably, both by the lumbermen and by the supporters of the Save-the-Redwoods League, because of their spirit of fairness and their clear analysis of the problem. Mr. Atwood brought out the same point that is emphasized in the statement by the League's President, Dr. John C. Merriam, on page 10 of this report, namely, that there must be established a "balanced program" which gives due regard both to the business and economic interests involved and to the public interest in preserving an adequate proportion of the primeval Redwoods, as well as perpetuating the supply of Redwood timber.

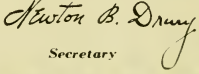
Acknowledgment of Aid Given So wide-spread has been the support of the League's work during the past year, not only by publi-

cations but by many organizations and individuals that it is impossible to make specific acknowledgment to each helper. The League wishes, however, to express its gratitude to all those who have so generously rallied to the aid of this vital public cause. Among those public officials whose co-operation has been valuable are the State Forestry Board and the State Highway Commission, the Supervisors of Del Norte and Humboldt Counties, and District Attorney Arthur W. Hill of Humboldt County, and Assessor F. W. Reynolds of Mendocino County.

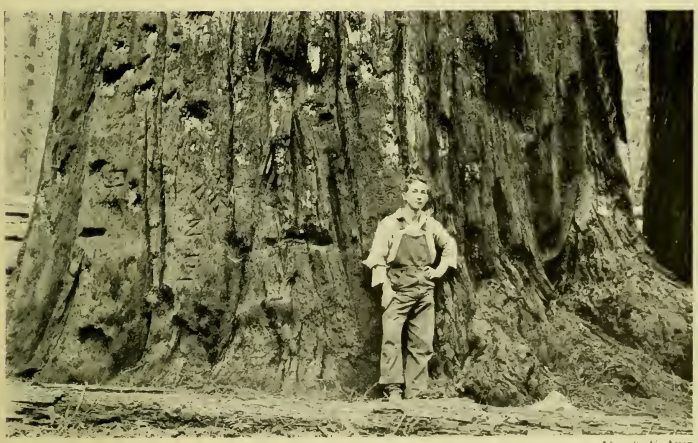
What the League Has Accomplished Starting with all Redwoods in Humboldt and Del Norte Counties privately owned in 1918, the League has been able to bring about the preservation, for public use, of fifteen miles of forest along the Redwood Highway, comprising almost 3000 acres and valued at close to a million dollars. Funds available for further preservation will bring the total valuation to at least two million dollars. This is the tangible accomplishment already presented by the League—an accomplishment in which every member who has given moral and financial support has played an important part. But more, the League now presents a definite program for 1926 and the next few years succeeding—a program involving several million dollars and embodying projects of such supreme importance to America and to the world that they are worthy of even more heroic efforts than in the past. For we are well on our way toward saving for posterity—and for ourselves—the world's finest forest.

Respectfully submitted to the members of the Save-the-Redwoods League, and to the general public, January, 1926.

Chairman, Board of Directors



Secretary



Mrs. E. E. Ayer

At the base of the "Big Tree" in Bull Creek Flat. While this Redwood has been singled out for special attention, there are many hundred more which compare favorably with it in size and majesty.

Courtesy California Redwood Association © Wonacott

Natural Redwood reforestation by stump reproduction. This view on the holdings of the Union Lumber Company, Mendocino County, shows a cut-over area about five years after logging. Companies representing over seventy per cent of the total cut of Redwood have definitely embarked on a program of reforestation.

The "Balanced Program" of the Save-the-Redwoods League

"THE large group of citizens supporting the aims of the Save-the-Redwoods League recognize the Redwood forests of California as one of our most valuable possessions and desire to secure for them the highest possible use. This movement has naturally directed itself toward several principal objectives covering the present and future value of the forests for a wide variety of economic, recreational and aesthetic purposes.

"Initiation of the plan to save certain portions of the forest in their primeval state made necessary a kind of conservation or fullest utilization effort different from that generally characteristic of such programs in the west. No part of the area considered was the property of the Government and the region could not be set aside for community purposes merely by resolution of any legislature. From the beginning it has been necessary not only to determine what the present and future needs of the community may be, but to recognize as well that every acre of timber available is the property of individuals and of corporate interests naturally concerned with its commercial use. The study of this situation has, therefore, involved a large group of factors, and required extremely careful examination in order to find the means for fair and satisfactory adjustment.

"The movement for saving of the Redwoods has received such support as has rarely been given to any program of this nature. The purposes involved in the plan have extended themselves from the securing and protecting of limited tracts of forest to consideration of questions which concern the continuing growth of timber for future generations. They have touched even the most fundamental consideration of little known technical and scientific problems which must be settled before fullest realization of commercial values in reforestation and in forest protection can be attained.

"But with such vision as has been shown by those supporting the movement, and with the whole-hearted support which has been furnished by every interest touching the work,

Courtesy California Redwood Association © Wonacott

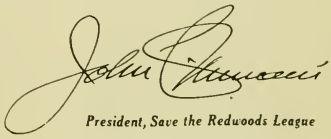
Aiding nature to reforest by planting seedling Redwoods between the young trees arising from the stumps. Last year the lumber companies set out about two million seedlings on cut-over lands. To aid in this work the League's Committee on Scientific Research is studying such matters as selection of nursery stock, and the physiology of Redwood root systems, and tree growth.

we must realize that attainment of the objectives is only beginning. We are just now coming to understand the needs of state and nation which should be met by setting aside of forests for future recreational, scientific and aesthetic purposes; the needs of the lumberman for study of reforestation open an attractive and important field for future effort; and requirements of the community for a knowledge of ways in which the products of trees may be most useful furnish wide opportunity for application of the highest knowledge and skill.

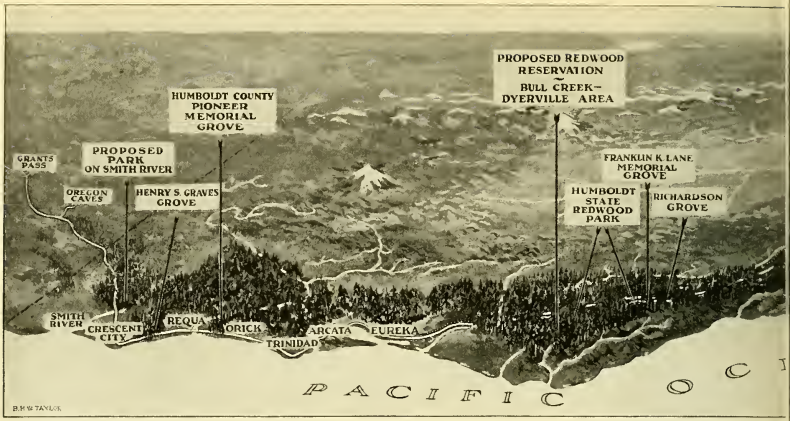
"The success of the program aimed to secure wisest use of this great asset of the country, depends ultimately upon interest and support of those who recognize our responsibilities to the future as well as to the present—who see that in development of the people of which we are a part there is now, as in every other age, much that should be done today and not tomorrow—much that if not done today shuts out forever great possibilities of further progress.

"We may not forget that in a true democracy the duty of citizenship extends beyond relations between members of a community at any given time. It involves a definite accountability to the past out of which we grew for all that the Creator and our ancestry have prepared for us in materials and in the power to use them. It includes the obligations to those arising from us and building on what will be their heritage.

"It is both the privilege and the duty of each generation to experience that joy which only the living of its own natural life can give. But no such pleasure is complete if based on the assumption that any generation lives for itself alone. A wide reach of opportunity for accomplishment is open to those who see that, small though their part may be, they have a place in that progressive movement of the world in which present links itself to past and future; who with an attitude of humility toward the power which moves the universe experience the joy of knowing that the heritage which they pass on is not less than what they have received."



President, Save the Redwoods League



This map shows the general distribution of the Redwoods as pictured above

Fossil remains show that mi widely distributed over the making their last stand in Ca Sierra, and the Sequoia sempe the Northern California Coas

"WE have reason to believe that during the millions of years since vegetable life first appeared, no finer forest has existed on earth than the Redwoods that are found along the Eel River and to the north."

Thus did Madison Grant of New York characterize the Redwood region in Humboldt County, California, at the time of the dedication of the Bolling Memorial Grove. The traveler along the Redwood Highway, or by the Northwestern Pacific Railroad, enters the Redwood belt shortly before the Humboldt County line is reached. As the route progresses, the forests become more and more impressive and spectacular. The Highway winds along the bank of the South Fork of the Eel River until it reaches the Humboldt State Redwood Park, 225 miles north of San Francisco, embracing a sixteen-mile strip of forest, containing the Lane, Stephens, Bolling, Hickey, Hammond, Kent, Mather, Gould, Perrott and Sage Groves.

Climax of Redwood Tour

The climax of this tour is reached at the Dyerville and Bull Creek Flats. This area has been singled out as representing the very

This panorama represents the Redwood belt viewed from a point opposite the projected forest reservation in the Dyerville-Bull Creek area. It shows the Redwood Highway, a route of varied beauty extending 492 miles from Sausalito, California, to Grants Pass, Oregon and traversing over 100 miles of virgin Redwood forest. It locates the various Redwood park lands already preserved.

lons of years ago forests of giant Sequoias were Northern Hemisphere. Today two species are lfornia—the Sequoia gigantea, or Big Tree of the irens, or Coast Redwood, in a narrow fringe along

xample of Redwood forest in existence, ing on the average the tallest and the trees, as well as the densest timber er acre. It is for this reason that, after ears of study of the Redwood belt, the lle-Bull Creek area has been selected he greatest outstanding national Red- orest Reservation.

cientific Interest of Redwoods

scientific interest of the Redwood is tedly greater than that of any other the cone-bearing class," says Dr. W. L. eminent authority on California trees. most wonderful vitality; it has almost te immunity from disease; its regener- ower is very remarkable; and it has a tonishing resistance to fire. Lastly, its ons over the northern hemisphere since iod of our record of its first appearance th, give it an unusual and romantic .

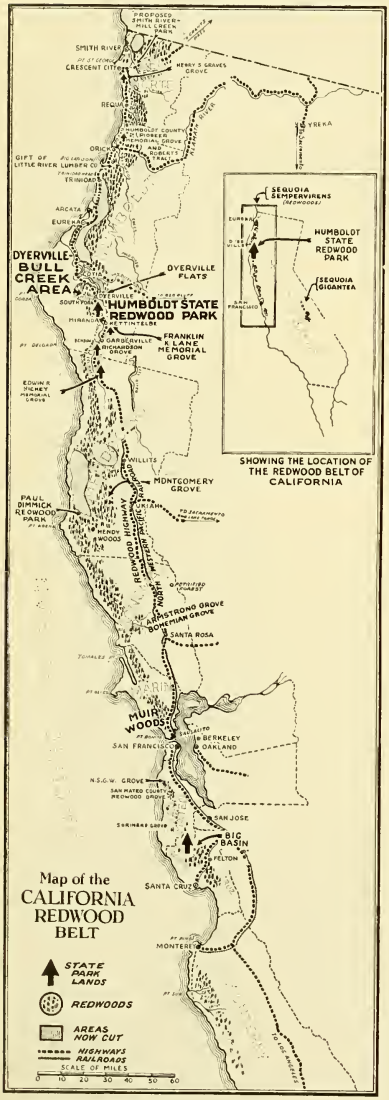
Once Widely Distributed

less than forty-five species of Redwood en described from the fossil beds of the and Miocene from the northern hemisphere including some 12 species from North America. They grew in France, Switzerland, Austria, Bohemia, Germany, England and Spitzbergen. In North America they grew at the mouth of the Mackenzie River, in Alaska, in various parts of the Rocky Mountains, in Oregon and in California. We may suppose that during the glacial epochs in Europe they were driven southward to the Mediterranean and there perished, since they could move no further southward.

Last Stand in California

"In North America the climatic factors were such as to favor their persistence only in California. These Redwoods then are in many ways the sublimest types of the earth's vegetation. For untold thousands of years this race of trees has been growing here—the finest example we have on the earth today of the vegetation of the Miocene epoch. And now—do we mean to sweep clean from end to end the finest part of the Redwood belt, where the forest is most representative of the vegetation of a geological age long since past? That would be a shameless thing to happen."

A Map of the California Coast Redwood Belt



Thousands of travelers have pronounced the California Redwood Highway, shown on the accompanying map, to be one of the remarkable scenic routes of the world.

The Sequoia sempervirens (Redwood) is found in its native state nowhere except along this narrow fringe on the California coast. Its companion species, the Sequoia gigantea (big tree), found only in the Sierra, has been extensively preserved in national parks and national forests. But except for the California State Redwood Park in the Big Basin and Muir Woods, none of the best of the virgin Redwood forests had been preserved before the organization of the Save-the Redwoods League in 1918.

In Humboldt and Del Norte Counties, where the Redwoods reach their very finest form, the League has been successful in preserving park areas extending over 15 miles along the Redwood Highway and comprising almost 3000 acres.

FACTS ABOUT THE REDWOODS

Length of belt	450 miles
Average width	20 miles
Original stand of redwood	1,406,393 acres
Area cut over to January 1, 1926	525,000 acres
Remaining stand of virgin Redwoods	881,393 acres
Present rate of cutting, per year	10,000 acres
Estimated life of remaining stand	80-100 years

If not preserved, many of the finest groves along the Redwood Highway will be gone in the next ten years.

REDWOODS PRESERVED

State Parks:

California State Redwood Park (1901-1918) (Big Basin, Santa Cruz County)	9,000 acres
Humboldt and Del Norte State Redwood Parks (1919-1926)	2,970 acres
Paul Dimmick Grove, Mendocino Co	13 acres
Gift of Little River Redwood Co	112 acres

National Monument:

Muir Woods (Gift of William Kent) (1908)	437 acres

County Parks:

Sonoma County (Armstrong Woods)	495 acres
San Mateo County (McCormick Tract) (1923)	310 acres

City Parks:

Arcata	40 acres
Eureka	40 acres
Oakland (1923)	180 acres
Total Preserved by Public	13,597 acres

Private Parks:

Bohemian Grove (Sonoma County)	840 acres
Shriners' Grove (San Mateo County)	1,640 acres
N. S. G. W. Grove (San Mateo County) (1925)	75 acres

It will thus be seen that out of a total remaining stand of 881,393 acres of virgin Redwood forest there has thus far been preserved by the public 13,597 acres, or about 1½%. There are yet many miles of Redwood Highway, the scenic attractions of which should be preserved.

Maps of Redwood Parks Preserved, 1919-1926

The redwood areas preserved during 1925 brought the total along the Redwood Highway in Humboldt and Del Norte counties to almost 3000 acres.

Map 1 is a key map showing the relative location of the various Redwood parks in Northwestern California.

Map 2 shows the HENRY S. GRAVES GROVE, 157 acres, 10 miles south of Crescent City, 386 miles north of San Francisco.

Map 3 shows the HUMBOLDT COUNTY PIONEER GROVE, 166 acres, 8 miles north of Orick, 356 miles north of San Francisco. It shows also the Roberts tract, 160 acres, purchased by Humboldt County in 1925.

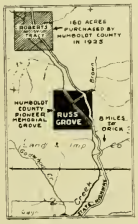
Map 4 shows RICHARDSON GROVE, with a total of 200 acres, including 80 acres added by gift of G. Frederick Schwarz in 1925.

Map 5 indicates the boundaries of the main unit of the HUMBOLDT STATE REDWOOD PARK extending from the Franklin K. Lane Grove at Kettintelbe to the Dyerville Flats, a distance of about 16 miles. In the Humboldt State Redwood Park are included the Sage, Gould, Perrott, Mather, Bolling and Stephens Groves.

Note the position of the Dyerville and Bull Creek Flats in the upper portion of Map No. 5.

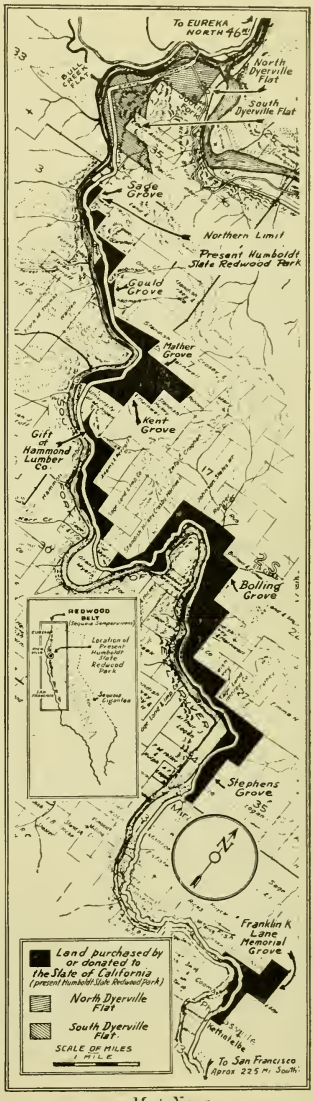
Map No. 1

Map No. 2



Map No. 3

Map No. 4



Map No. 5

A Great Redwood Forest Reservation

Of national significance, planned in Bull Creek Basin, Humboldt County, California

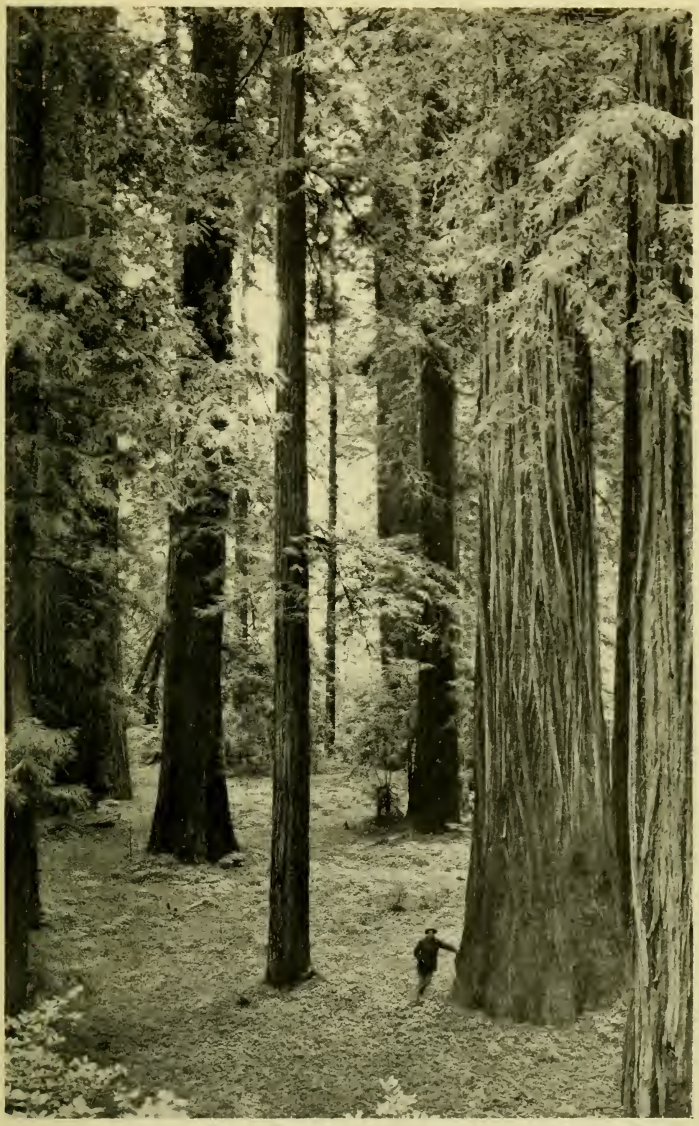
(Full text of public statement issued by the League, December 1, 1925)

A GREAT Redwood Forest Reservation comprising approximately 10,000 to 12,000 acres and representing a valuation of several million dollars is contemplated in plans recently outlined, and given approval by the Council of the Save-the-Redwoods League at its Annual Meeting in San Francisco on September 8, 1925. Announcement to this effect has just been made by Dr. John C. Merriam of Washington, D. C., President of the Save-the-Redwoods League, and J. D. Grant of San Francisco, Chairman of the League's Board of Directors. This reservation if established will be of national significance, both as to size and importance, and will, according to the plan, be located at the junction of the South Fork and Eel rivers at Dyerville, Humboldt County, California, and will comprise the major portion of the watershed of Bull Creek, a tributary of the South Fork of the Eel.

At the same meeting, the League's Council indicated its support of plans for preserving from 700 to 1000 acres on the Smith River, near Crescent City, in Del Norte County, California, including a strip of Redwood timber along the new State Highway for a distance of from four to six miles and taking in the famous Mill Creek Flat at the junction of Mill Creek and the Smith River. The contemplated Redwood Park on the Smith River has the whole-hearted support of officials and citizens of Del Norte County, where it is located. It is recognized as containing not only a marvelous stand of Redwoods and exceptional river scenery but also as offering unusual recreational opportunities.

Toward the realization of the larger Redwood reservation at Dyerville, the League already has in hand a fund in excess of three-quarters of a million dollars to be utilized toward the purchase of portions of the Dyerville Flats and also a portion of the celebrated Bull Creek Flat. Many scientists and world travelers have declared that in Bull Creek Flat the Redwood is found in its highest form of development. The largest and tallest of the Sequoia sempervirens and also the most symmetrical are found in the main Bull Creek Flat. It is stated that probably nowhere since the beginning of time has there existed a more majestic forest. Lumbermen are agreed that the average density of the timber here reaches the maximum known in these forests. It is with these facts in mind and also because of the unusual recreational opportunities afforded that the League has decided to support the plan for saving this area.

The owner of this timber, the Pacific Lumber Company, one of the largest operating concerns in the lumber industry, is cooperating with the Save-the-Redwoods League in order to determine a fair valuation of the area to be purchased from them and taken over for public use. Conferences to this end between officials of the League and the Company are now taking place. It is expected that within a short time the exact price at which this property is to be purchased will be determined and then it will rest with the interested public to secure funds necessary for setting aside this magnificent area. The Save-the-Redwoods League is lending its whole-hearted support to this project. A Finance Committee has been appointed to represent the League in handling pledges and funds. It consists of J. D. Grant and William H. Crocker of San Francisco, Duncan McDuffie and J. C. Sperry of Berkeley, and R. G. Sproul, Vice President and Comptroller of the University of California. The Committee appointed to negotiate with the Pacific Lumber Company consists of the chairman, Colonel Henry S. Graves, former Chief of the United States Forestry Service and now provost of Yale University and dean of its Forestry School, Professor Walter Mulford, head of the Department of Forestry in the University of California, J. C. Sperry and Duncan McDuffie. The well known forestry expert, Major David T. Mason, who for a number of years has been directing the reforestation plans of the lumber interests in Mendocino and Humboldt counties, is participating in the negotiations.



© Metcalf

In the main Bull Creek Flat, Humboldt County, California, where the Redwoods appear in their supreme development.

Failure to save the Dyerville-Bull Creek and the Smith River-Mill Creek areas "would reflect for all future time upon the intelligence of the American people," says the Saturday Evening Post

(By special permission from Editor George Horace Lorimer of the Saturday Evening Post, the following editorial is reprinted from the issue of that publication appearing January 9, 1926.)

Does the Public Want It?

UNSELFISHLY and energetically though organizations and leaders may strive for worth-while objectives, their goal is seldom reached without public support. In theory, at least ninety-nine out of a hundred people favor preserving the ancient redwood trees of Northwestern California. To see these forests is to abhor the very thought of their destruction. Human nature instinctively recoils from the mere commercial erasement of a link in the life processes of the earth at once so important and so noble.

But sentimental violence of opinion in opposition to the removal of these trees does not pay for their saving. Denouncing the lumbermen for cutting forests which legally belong to them will butter no parsnips. Here is a case where heated emotional discharges regarding devastation and devastators should give way to the checkbook and the dotted line. It costs money, real money, to save redwoods, and the time has arrived when it must be forthcoming in generous amounts.

Already a considerable number of scattered patches or groves of redwoods have been preserved through the efforts of the Save-the-Redwoods League. But the total area is exceedingly small in proportion to the forests that will ultimately be cut, and the most important and impressive groves have not yet been purchased. Failure to add to the existing reservation would reflect for all future time upon the intelligence of the American people.

Unfortunately it has been difficult for those who have led in the movement to save the trees to decide upon a definite program of conservation. Under the most favorable conditions, only a small percentage of the total redwood forest can be rescued from the woodman's ax. Yet every grove is beautiful, and contains trees which have lived for centuries and perhaps for several thousand years. Nowhere else on the earth are the ancient giants to be found in any numbers at all. Naturally each grove has had its local partisans, its ardent supporters. Extreme Nature lovers, on the other hand, have insisted that all the trees be saved, which is an economic impossibility.

Under the circumstances it has been necessary to study the situation with minute care in order to arrive at a definite program or plan. This plan as formulated provides for the preservation of two general areas. The first of these would be a great Redwood Forest Reservation, comprising approximately ten thousand to twelve thousand acres, including land at the junction of the South Fork and Eel rivers at Dyerville, Humboldt County, California, and the major portion of the watershed of Bull Creek, a tributary of the South Fork of the Eel. The largest and tallest of the trees are found here, the average density of the timber is the maximum known, and probably nowhere since the beginning of time has there existed a more majestic forest than this.

Such a reservation would be of national significance, as to both size and importance. The plan, however, provides for a second reservation, of from seven hundred to one thousand acres, on the Smith River in Del Norte County, in a more remote and virgin country, including a strip of timber along the new state highway for a distance of from four to six miles, and taking in the famous Mill Creek Flat.

Many individuals and many organizations are interesting themselves in the great national problem of conservation. Too often they merely look over the surface of the subject, and in the case of organizations, adjourn after passing a lot of pious resolutions and appointing a lot of committees with vague duties to perform. The plan for saving two major redwood areas is definite. The idea is not to save more redwoods in general, but to place beyond jeopardy two distinctive forests, the preservation of one of them representing, in the opinion of competent authorities, the greatest single thing which can be done in the conservation of plant life.

This is not a case of merely adding to the redwoods saved; it is solely a question of preserving definite, outstanding forests—about the last thing on earth that requires an apology from anybody. If saved, the Dyerville-Bull Creek and the Smith River-Mill Creek

areas will prove a lasting resource, from the standpoint of spiritual, aesthetic, educational, recreational and economic values. In the future the study and increased knowledge of these mammoth and almost prehistoric living creatures may well add to our basic acquaintance with the laws of plant life, upon which our own human existence depends.

The plan or program of the Save-the-Redwoods League is one which warrants support from every direction for definite reasons. It is not easy to raise money merely to buy trees, especially when several million dollars is needed. We are too much in the habit of regarding trees as we do the air and sunshine —a free good.

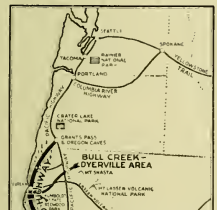
Shortly the price at which these forests can be saved for the public will be determined in terms of exact figures. In a number of respects it is the greatest single conservation opportunity in the country. The decision as to their preservation rests with the interested public. The public can have it if it wants it.

The Redwood Highway

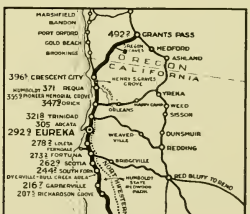
"THE Redwood Highway Empire," says Clyde Edmondson, Manager-Secretary of the Redwood Highway Association, "is destined to be one of the outstanding play-grounds of the West, as well as the best known mainline highway anywhere—because of its giant Redwood forests alone. Do you know that you may ride through over one hundred miles of giant Redwood Trees without leaving the main Redwood Highway?

The territory bordering the Redwood Highway in Northwestern California and Southwest Oregon offers the finest and sportiest hunting and fishing to be found anywhere.

Furthermore, there are rivers, streams, lagoons, Indian Reservations, whaling stations, marble caves, lakes rivaling those in Switzerland, petrified forests, and innumerable other points of interest, all concentrated in this one great Empire of the Redwood Highway."



Map showing relation of Redwood Highway to other highways



Mileage Map of the Redwood Highway

MEMBERSHIP
in the Save-the-Redwoods League

Founders	9
Associate Founders	2
Patrons	26
Life Members	163
Sustaining Members	12
Contributing Members	571
Annual Members	3853
Junior Members	109
Donors	470
Total Membership	5215

Founders

Mr. Edward Doheny
Mrs. Newell Knight French
Mr. Edward S. Harkness
Mr. William Kent
Mr. Stephen T. Mather
Dr. John C. Phillips
Mrs. Zipporah Russ
Mr. George Frederick Schwarz
"A Resident of Massachusetts"

Associate Founders

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Dr. Norman Bridge
Mr. William L. Brown
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Mrs. Edward Butler
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Mr. George Eastman
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Mr. Jacob Marhoffer
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Miss I. M. Mason
Miss Katherine L. Mather
Mr. Samuel Mather
Mr. William Gwinn Mather
Mr. Frank Miller
Dr. Henry Fairfield Osborn
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Mr. Max L. Rosenberg
Mr. Julius Rosenwald
Mrs. Martin A. Ryerson
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Mr. Wallace M. Alexander
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Mr. M. T. Owens
Mr. H. W. O'Melveney
Mr. Edward L. Parker
Mrs. S. H. Palmer
Col. J. H. Poole
Mrs. J. H. Poole
Piedmont Garden Club
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M. Vonson Company
Mr. Robert B. Whiteside
Miss Mary Y. White
White Memorial Foundation
Mr. Alfred F. Wieland
Miss Constance Willard
Mrs. Charlotte H. Wing

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Mrs. Selah Chamberlain
Mrs. Averey Coonley
Mrs. M. E. Gaines
Garden Club of Alameda
Miss Alice Griffith
Mrs. Clarence M. Hyde
McDonnell & Company
Mr. George J. Openhym
Mrs. Herbert L. Satterlee
Miss Louise Schwamm
Miss Mary Stewart

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On the Redwood Highway south of Eureka. One of the Redwood groves being considered by the women's clubs of California as their contribution toward the great national reservation.

FINANCIAL STATEMENT OF THE SAVE-THE-REDWOODS LEAGUE

January 19, 1926.

TO THE SAVE-THE-REDWOODS LEAGUE, BERKELEY.

GENTLEMEN:—

The books and accounts of the Save-the-Redwoods League for the year December 1, 1924 to November 30, 1925, have been audited and I certify that the accompanying statement of income and expenditures correctly exhibits the financial condition of the League.

Yours very truly,
(Signed) ROBERT G. SPROUL,
Treasurer.

FINANCIAL STATEMENT

December 1, 1924 to November 30, 1925

On hand, December 1, 1924:		
General Fund, Mercantile Trust Co., Berkeley	$ 4,510.16	
Lane Grove Fund, Crocker National Bank, San Francisco	9,354.80	
Lane Grove Revolving Fund, First National Bank, Eureka	106.58	
Upkeep Fund, contributed by Mrs. William H. Crocker (Mercantile Trust Co., Berkeley)	343.69	
Resident of Massachusetts Fund, First National Bank, Eureka	342.56	
Total on hand, December 1, 1924		$14,657.79
Income, December 1, 1924 to November 30, 1925:		
General Fund:		
Membership dues and contributions	$18,072.34	
Transferred from Resident of Massachusetts Fund	342.56	
Miscellaneous	432.19	
Interest on Lane Grove Fund	205.49	
Income added to Balance on Hand, available for expenditure		19,052.49
		33,710.28
Expenditures, December 1, 1924 to November 30, 1925:		
From General Fund:		
For Scientific Research on Re-forestation	700.00	
Survey of Redwood Region	1,281.84	
Printing	2,502.26	
Photography and Prints	763.93	
Art Work	347.25	
Materials	1,257.99	
Circularization	1,034.76	
Direct Mail	445.05	
Stamps	1,432.55	
Office Salaries and Clerical Assistance	10,396.63	
Office Rent	525.00	
Telephone & Telegraph	464.81	
Travel Expense	667.01	
Miscellaneous	1,173.81	
From Lane Grove Fund:		
Final Payment and Interest, McMeekan Grove	2,823.33	
Reports and Studies	272.55	
Printing Franklin K. Lane Booklet	200.00	
Miscellaneous from Eureka Revolving Fund	127.74	
From Resident of Massachusetts Fund:		
Transferred to General Fund	342.56	
From Upkeep Fund	343.69	
Total Expenditures		27,102.76
Balance on hand, November 30, 1925:		
Franklin K. Lane Memorial Grove Fund	$ 6,064.41	
Revolving Fund, First National Bank, Eureka	178.84	
General Fund, including Administrative, Research and Survey Funds	364.27	
		6,607.52
		$33,710.28

NOTE.—The League has available funds in excess of $750,000 for purchases in the Bull Creek and Dyerville areas. During 1925 contributions totalling $4,850 were made through the League to the State Forestry Board by Mr. George Frederick Schwarz of New York. The California State Federation of Women's Clubs has on deposit a fund of approximately $40,000 to be expended in the purchase of a Redwood grove. Humboldt County in 1925 expended $40,000 in preserving the Roberts tract near Orick. Del Norte County has appropriated from its Treasury $5,000 for Redwoods preservation. Mr. Edward S. Harkness of New York pledged a contribution of $50,000 and Mr. Isidor Dockweiler of Los Angeles has pledged $7500.

Tibbitts

At the mouth of Bull Creek, a stream of perennial flow. Abundant moisture is one reason for the perfect development of the Redwoods in Bull Creek Flat

© Moulin

On the Redwood Highway, a short distance south of Dyerville. This view is typical of the forests that will be preserved by carrying out the plan to preserve the Dyerville Flats.

Save-the-Redwoods League

Organized 1918 to Preserve the Oldest Trees in the World
Incorporated October 21, 1920, as a Non-Profit Corporation

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JOSEPH D. GRANT, *Vice-Pres.*
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OBJECTS

1. *To rescue* from destruction, for the enjoyment of this generation and those to come, representative areas of our primeval forests.

2. *To establish* through Federal aid a National Redwood Park, and through State aid a State Redwood Park.

3. *To purchase* Redwood groves by private subscription, and to establish memorial groves for individuals and organizations.

4. *To obtain* the protection of timber along State highways in California, particularly to preserve the beauty of the celebrated Redwood Highway.

5. *To support* the reforestation and conservation of our forest areas.

TYPES OF MEMBERSHIP

(1) Founder $5,000.00
(2) Associate Founder . . . 2,500.00
(3) Patron 500.00
(4) Life Member 100.00
(5) Sustaining Member $50.00 per annum
(6) Contributing Member. . . $10.00 per annum
(7) Annual Member . 2.00 per annum
(8) Junior Member . .50 per annum

Membership fee or donation may be sent to

ROBERT G. SPROUL, *Treasurer*

220 CALIFORNIA HALL, UNIVERSITY OF CALIFORNIA, BERKELEY, CALIFORNIA

The views which appear on the front and back covers of this report are photographic studies in the Dyerville Flats by H. C. Tibbitts

Save-the-Redwoods League

220 California Hall, University of California

Berkeley, California

SAVE THE REDWOODS

Sequoia—the Auld Lang Syne of Trees

By

HENRY FAIRFIELD OSBORN

President of the American Museum of Natural History, Member of the Council of the Save the Redwoods League

Courtesy of Mrs. Edward L. Ayer

In Montgomery Grove above Ukiah.—It is hoped and believed that Mendocino County will buy the Montgomery Grove of redwoods. This would make the town of Ukiah the entrance to the great scenic State Highway through the redwood region. Isolation of the United States during the war has emphasised travel within our own boundaries, while rapid development in the ease of motor touring has added a new possibility to such travel for all. Northern California will now find it to the advantage of the many among its population to save its scenic beauty. Meager profits from redwood lumbering for the few lumbermen among its citizens will no longer be considered adequate return for the present desolation and future poverty of the country.

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[*Reprinted from* NATURAL HISTORY, VOL. XIX, No. 6, pp. 598–613, 1919]

Freeman Art Co., Eureka, Humboldt County, California

THE HERITAGE OF AMERICANS

The northern redwood forests are a heritage for every American—yet all are in the hands of private capital. We must purchase sections of this redwood land from the lumber companies who own them, at once before everything has been leveled by the ax and fire. For these forests are the greatest the earth has ever seen in all the millions of years of its history. The trees tower into the sky between three and four hundred feet and attain a prodigious thickness of trunk; and so ancient are they that the largest of them have seen the passing of more than four thousand generations of men

[*Reprinted from* NATURAL HISTORY, VOL. XIX, No. 6, pp. 598–613, 1919]

Freeman Art Co., Eureka, Humboldt County, California

The contrast!—Hundreds of thousands of acres of redwoods in California have been cut in the last sixty years. Each sawmill is a center of incalculable loss not only through the timber removed but especially through waste and fire

Sequoia—the Auld Lang Syne of Trees

AN IMMEDIATE WORK FOR EVERY LOVER OF AMERICA IS THE PRESERVATION OF THE REMNANTS OF REDWOOD FORESTS IN NORTHERN CALIFORNIA

By HENRY FAIRFIELD OSBORN

President of the American Museum of Natural History, Member of the Council of the Save the Redwoods League

IT was said pithily by John Muir that any fool can destroy trees; they cannot run away from him, and if they could they would still be chased and hunted to their death—as long as fun or a dollar could be got out of them. Speaking of the Sequoias, he contrasted the ability of the Creator to protect their race, as he has done, through millions of years from drought, disease, avalanches, tempests, and floods, with the inability of that same divine power to protect them even for a generation from fools—"only Uncle Sam can do that."

If the American Museum, by some magic of power, could hope for large influence in conservation matters, it would vote to save these Sequoia woodlands. Their venerable and colossal splendor is a heritage for the future America. Many of these trees have lifted their heads to the sunshine of more than a thousand summers, and the largest of them have outlived the passing of four thousand generations of men. Mere matter-of-fact and commercial consideration, moreover, entirely apart from any sentiment regarding their beauty or their age,

should save them: "in the name of thrift, and foresight, and love of country"—as Roosevelt would have said.

The destruction has progressed far, and has been especially augmented of late. The most majestic among the manifestations of life on the globe are being cut for—breathe not aloud the uses to which they are being put, lest the recorders of human history laugh! Sequoias towering more than three hundred feet into the sky are being brought to the ground for grape stakes for the vineyards of California; for shingles and railroad ties for the temporary convenience of a mankind which is slow to evolve beyond aims of immediate personal gain.

Do we ask why the burden of saving the redwood forests falls so immediately on the shoulders of the state and national governments—outside of the general reason that state and national governments should look out for the welfare of the people? Uncle Sam owned all this western timber country—yet Uncle Sam was so desirous of giving every man in the free United States his chance, that millions of acres of timber land were sold at two and one half dollars an acre when just one individual tree of the wide-stretching forests was worth at the lowest figure one hundred dollars. Thus the timber went into the hands of private and corporation capital—and "nothing could be done about the crazy bargain!"—at least the sales could not be undone.

This was the condition when Muir wrote these words in 1900, and the twenty years since that time have seen the ranks of the redwoods pushed farther and farther back from the sea, by lumbering methods involving frightful waste. Some solution of the problem must now be sought which will return to the government as large a part of the redwood lands left as money for purchase can be found, to remain permanent possessions of the American people.

One of two courses we shall follow. Either we shall now, at a goodly expenditure of money, save the redwood forests as they stand, or we shall lose them, and after a few years, at an exceedingly greater expenditure of money, try to save a few small mutilated tracts which may be left, knowing that we have doomed the redwood as a race to an eternal extinction. We recognize the second course as that usually consummated in the forest policy of any new community. Have we not learned the lesson of loss, especially in the East, so that we can apply the principle to the redwood? We all realize that we long ago passed the day when we could afford to look upon trees as giant weeds to be got rid of by any method, as our forefathers in America looked upon them, or even as inexhaustible gifts of Heaven to be managed wastefully. They are one of the few vital assets of the country. If we have not learned the lesson, we shall in this particular instance not merely burden our children with the bond issues of an attempted restoration of what we have destroyed, we shall lose the redwoods beyond all possibility of restoration. For in the case of trees such as white pine, black walnut, and others now nearly exterminated, we have not been dealing with species that take half a thousand years to reach maturity and two or three times that to attain their greatest nobility of size. One hundred years has been more nearly the maximum—and that has seemed too long to the man who lives for himself only and for today.

The species of Sequoias are only two,[1] the big tree (*Sequoia gigantea*) and the redwood (*Sequoia sempervi-*

[1]The genus *Sequoia* is not closely related to any other living group of trees, but in former geological times, reaching back as far as the Jurassic and Trias, near relatives of our Sequoias were common, with many species scattered widely over the northern lands of the globe. Their fossil remains have been discovered in Europe and in various lands bordering the Arctic seas—Siberia, Spitzbergen, Greenland, Canada, and Alaska. The big tree and the redwood are therefore representatives of a family whose existence with small variation must be measured in millions of years—they are "the auld lang syne of trees."

rens). If we journey southward through the warm interior valley of California, on our left hand tower the snow-capped Sierra Nevada Mountains. These bear in their high altitudes on the seaward slopes the big trees. They are heroic in size. Mixed with other conifers in open groves, they stand massive and battered like ruins from an age when life was measured not by single revolutions of the earth around the sun but by thousands and tens of thousands. Fortunately, this species of Sequoia is protected by its very inaccessibility, from five to eight thousand feet up the mountain slopes.[1]

On the right hand as we journey southward through California is the low verdant Coast Range (one thousand to two thousand feet elevation); and over its seaward slopes and in its wide moist valleys are the remnants of the forests of the redwoods. But a very few years ago they reached from north of the California and Oregon boundary line southward in an unbroken belt of forty miles maximum width, to the southern boundary of Mendocino County, California, then on farther south in isolated small forests as far as the Bay of Monterey—a total distance of nearly five hundred miles, twice the north and south lap of the big trees in the Sierras.

These redwoods show striking adaptation to the depth of soil and amount of moisture. On the steep slopes where the soil is shallow, they do not attain a height of more than 225 feet, with greatest diameter of trunk ten feet, and here they grow in open stands more or less mixed with other trees (especially red fir). At increasingly low altitudes and consequent greater depth and moisture of soil the redwoods increase in size and predominate the forest more and more until they form close, crowded stands unmixed with other trees. On flats and in the bottoms of valleys where rivers cut their way through the Coast Range to the Pacific, they make giant redwood fastnesses, many of the trees reaching well above three hundred feet, frequently with a diameter of trunk from sixteen to eighteen feet.

Many of us have entered these greatest forests of the world, in our own northern California. "Architecturally" they consist of long curving aisles between the giant columns of the trees, sometimes with spacious vistas opening to the sea; and the ground and the dark fluted trunks are patterned with shifting mosaics of sun and shadow. For long ages they have stood here in the face of the winter rains that sweep down from the northwest. They have been wrapped about by the moisture-laden summer fog that drifts in from the sea and dips low among the green spires. So great is the moisture among the redwoods of the bottom lands that not only are the trees themselves wonders of growth and verdure, but they are draped with mosses and the ground at their feet is bedded with ferns.

It has been said that this tree, from the standpoint of its timber, is "too good to live," and certainly history has proved it so since the white man discovered its home along the Pacific. The wood has all the qualities to recommend it for the uses of commerce: it is rich in color and takes a beautiful polish, the grain is even and fine, it is firm yet soft and easy to work,[2] it is

[1] This is the Sequoia that has been made world famous by the eloquence of John Muir, whose main work was in the Sierra Nevada Mountains; and it is the great scenic feature of Sequoia National Park—one of the first of our national parks, instituted in 1890, the same year as Yosemite, and the first to be instituted after the Yellowstone in 1872. The greater number of the remaining big tree groves are now under the protection of the National Park Service. On the other hand, the big tree, although it has received so much more attention and protection, is not as great an economic asset for the future as the redwood, particularly because it reproduces only by the slow method of seeding and that with great uncertainty, especially in the northern part of its range.

[2] This refers especially to the redwoods of the bottom lands. The trees of the slopes are likely to have wood less valuable, more "flinty" in character. The "soft" redwood tree is the type which has been so disastrously cut and burned over the coastal flats, until today it represents but a small proportion of the whole redwood area.

Courtesy of Mrs. Edward L. Ayer

In Montgomery Grove above Ukiah.—It is hoped and believed that Mendocino County will buy the Montgomery Grove of redwoods. This would make the town of Ukiah the entrance to the great scenic State Highway through the redwood region. Isolation of the United States during the war has emphasized travel within our own boundaries, while rapid development in the ease of motor touring has added a new possibility to such travel for all. Northern California will now find it to the advantage of the many among its population to save its scenic beauty. Meager profits from redwood lumbering for the few lumbermen among its citizens will no longer be considered adequate return for the present desolation and future poverty of the country

Courtesy of Mrs. Edward L. Ayer

Luxuriance of growth in a redwood stand near Mendocino.—Sonoma County has taken a step in the right direction in purchasing the Armstrong Grove; Humboldt County has very recently bought up the holdings of operating lumbermen along the State Highway; Marin County fortunately has been presented with the Muir Redwoods on Mount Tamalpais, by former Congressman William Kent, of San Francisco; but the world has yet to hear from Mendocino and Del Norte counties that their enthusiasm and patriotism have saved valuable sections of local redwoods

almost fireproof—and in addition to all these good qualities, it is incomparably durable. It is said that trees which have lain five hundred years on the damp ground in the forest have been carried to the mill and made into good lumber.[1]

Do we need to ask if our redwood forests are economically worthy of preservation? Or can we question that they should be removed from individual and corporation interests which must perforce look to an immediate gain in order to realize on investments? Under the ownership of state and national governments, experts in forestry can *keep them forests* while still making them yield a product of timber.[2]

Hundreds of thousands of acres of redwoods have been cut during the last sixty years. San Francisco is largely built of redwood. The whole state is a land of redwood bungalows, paneled and beamed with the choicest grains of the wood,—which is good, except that on an average one half of a tree has been wasted for every one half used, and all the young trees which grew near the mature trees cut have been killed. Especially during the last thirty years, since improved equipment came in, redwood lumbering has proceeded with disastrous speed, and the wood has been used not only for construction and finishing, for shingles and grape stakes, but also for a multitude of other things, among them telegraph and electric light poles, paving blocks, and water tanks. And now recently, because of a scarcity of available timber brought about by the war, the United States Railroad Administration authorized the use of redwood for railroad ties. This, coupled with the building of the roads of the new California State Highway through some of the best of the remaining northern redwoods, started an army of small contractors into lumbering operations, with resulting destruction and waste.

Such was the condition in the early summer of 1919 when Colonel Graves, chief of the United States Bureau of Forestry, and Secretary Houston, of the Department of Agriculture, visited Humboldt and Del Norte counties and impressed upon the people the irreparable loss they were sustaining. It was still the situation in July, 1919, when the "Save the Redwoods League" was organized at San Francisco under the spur of interest of various public-spirited men (see page 605).

The Redwoods League National in Scope

The Redwoods League has the support of the national and state governments, and is national in scope.[3] Although its Council is made up mainly of influential men from California, it includes also prominent representatives from the East.

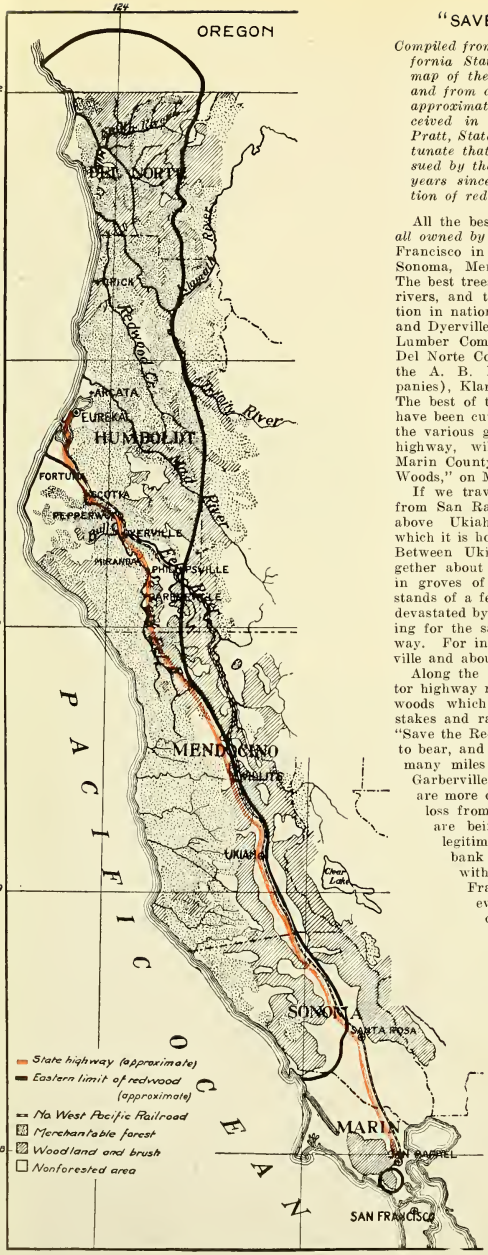
One of the first steps of the League was to call the attention of the United States Railroad Administration to the injury to the California State Highway by the cutting of railroad ties along its margin. At once the Administration issued an order that no ties should be purchased from areas which would come within the proposed reservations, or

[1] Bureau of Forestry, *Bulletin* No. 38, "A Study of the Redwood," 1903.

[2] That this can be done is largely owing to the fact that the redwood is an active dominant type of tree although of such ancient lineage. It sprouts vigorously from the stumps when cut, soon forming great circles of tall young trees. Circles of mature trees with the central stump no longer in existence are found in the primeval forest, indicating that this has been the method of growth. It is probable that, if the redwood lands can come under government ownership, such second-growth forest with proper management can be made to supply a large part of the demand for redwood timber, and the primeval forests be left undisturbed, except as certain trees may need to be removed for the health of the others.

[3] The story of the work and aims of the Redwoods League and of the survey of the northern redwoods which was made under its auspices is told by Mr. Madison Grant, a member of the Council of the League, in the September issue of the *Zoological Society Bulletin* of New York—an article which carries the interest and conviction of authoritative knowledge.

Many of the facts in the accompanying statement of the situation of the various groves and forests and of the plans for their conservation are taken from the typewritten Official Report of the Survey made under Mr. Stephen Tyng Mather, director of National Parks, and from Mr. Grant's article.



"SAVE THE REDWOODS" MAP

Compiled from the 1916 geological map of the California State Mining Bureau, the 1911 forest map of the California State Board of Forestry, and from data regarding the state highway and approximate eastern limit of redwoods, received in December, 1919, from Mr. M. B. Pratt, State Forester of California.. It is unfortunate that a 1919 forest map has not been issued by the California Board, because the eight years since 1911 have seen appalling destruction of redwoods, especially bordering the sea

All the best redwoods remaining (and *they are all owned by lumber companies*) are north of San Francisco in the coastal counties of California—Sonoma, Mendocino, Humboldt, and Del Norte. The best trees grow on the bottom lands along the rivers, and those especially adapted for preservation in national or state parks are the Bull Creek and Dyerville stands (owned mainly by the Pacific Lumber Company) in Humboldt County, and in Del Norte County the Redwood Creek (owned by the A. B. Hammond and Sage Lumber Companies), Klamath River, and Smith River stands. The best of the Mendocino and Sonoma redwoods have been cut, some very recently; it is hoped that the various groves left, especially along the motor highway, will be set aside by these counties. Marin County has no redwoods left, except "Muir Woods," on Mount Tamalpais, near San Francisco.

If we travel northward on the State Highway from San Rafael, we find the first redwoods just above Ukiah—the small "Montgomery grove," which it is hoped Mendocino County will purchase. Between Ukiah and Bull Creek there are altogether about 10,000 acres of redwoods, scattered in groves of a few acres with occasional larger stands of a few hundred acres, most of them badly devastated by lumbering and fire but all worth saving for the sake of the attractiveness of the highway. For instance, there are 5 acres at Phillipsville and about 500 acres near Miranda.

Along the South Fork of the Eel River the motor highway runs through some extremely fine redwoods which were rapidly being cut for grape stakes and railroad ties until the influence of the "Save the Redwoods League" was recently brought to bear, and which are still threatened along very many miles of the highway. In fact, between Garberville and Eureka, lumbering operations are more or less in full swing, and the nation's loss from waste and fire in the forests which are being cut about equals the loss from legitimate uses of the timber. The right bank of the Eel River below its junction with the South Fork resembles devastated France, and the devastation is complete everywhere on the left bank also except for one fine stand just beyond Bull Creek, which belongs to the Pacific Lumber Company.

There is need for immediate action if the last of these most ancient and heroic trees are to be saved. Who will dedicate a redwood grove to the health and happiness of the American people? The lumber companies offer every coöperation in selling for such purpose

within four hundred feet of any state highway. This is the federal coöperation we should expect and explains that the situation was not previously understood.

Situation of the Redwood Forests

A survey of the northern redwoods was at once inaugurated by the League, especially with reference to the selection of a suitable area for a national park.

The survey (August 5 to August 10) was made by Mr. Stephen Tyng Mather, director of National Parks, and Mr. Madison Grant, accompanied by Mr. Charles Punchard, landscape engineer of the National Park Service. On the way northward from Ukiah to the junction of the South Fork of the Eel River with its tributary Bull Creek and with the main Eel River, the surveying party passed about ten thousand acres of redwoods (see map). These are in groves of a few acres each with occasional larger stands of a few hundred acres,[1] many of them badly devastated by lumbering, most of them pitiful remnants of the original forests, but all of vast importance from the standpoint of the attractiveness of the highway.

Northward beyond these scattered groves are more nearly solid stands grouped naturally by the drainage of the region into great forests. Prominent are the Bull Creek and Dyerville flats, culminating the northward stretch of the South Fork groves, Bull Creek at the west in the triangle between the South Fork and its tributary Bull Creek, the Dyerville forest at the east in the triangle

[1] It must be understood that one acre of forest even on the most crowded bottom lands means only about three dozen redwoods, 20 inches and more in diameter (known as merchantable timber), with about a dozen additional trees less than 20 inches in diameter. In the mixed forests on the slopes the number of redwoods to the acre may run below 25, inclusive of all sizes.

Officers of the Save the Redwoods League are as follows:

President, FRANKLIN K. LANE. Secretary of the Department of the Interior
Secretary and Treasurer, ROBERT G. SPROUL

COUNCIL OF THE LEAGUE

E. C. BRADLEY
Former Assistant Secretary of the Interior

WILLIAM E. COLBY
Past President of the Sierra Club

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President of the Alumni Association, and Regent, University of California

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Regent of the University of California, Trustee of the California Academy of Sciences

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HENRY S. GRAVES
Forester, Forest Service, Washington, D. C.

WILLIS L. JEPSON
Professor of Dendrology, University of California

WILLIAM KENT
Donor of Muir Woods, California

STEPHEN TYNG MATHER
Director of National Parks

JOHN C. MERRIAM
President, Pacific Division, American Association for the Advancement of Science

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President, American Museum of Natural History, New York

CHARLES F. STERN
State Superintendent of Banks, San Francisco, California

BENJ. IDE WHEELER
President Emeritus, University of California

RAY LYMAN WILBUR
President, Leland Stanford Junior University

CHARLES B. WING
Acting Chairman, State Redwood Park Commission of California

The immediate purposes of the League are stated as follows:

1. To purchase redwood groves by private subscriptions and by county bond issues.
2. To secure a state bond issue to buy the finest redwood groves along state highways.
3. To establish through federal aid a National Redwoods Park.
4. To obtain through state and county aid the protection of timber along the scenic highways now in course of construction throughout California.
5. To encourage the state to purchase cut-over redwood areas for reforestation by natural means, or by replanting where repeated fires have made sprout reproduction impossible.

The fee for annual membership in the League is two dollars. "Membership is an expression of desire to support the plans proposed. It is hoped that through the coöperation of all organizations and individuals definitely giving their interest to this project the purposes of the movement may be realized while it is still possible to secure those ancient groves which now invite protection." Professor John C. Merriam is chairman of the Executive Committee.

Courtesy of Mrs. Edward L. Ayer

IN THE LUXURIANT BULL CREEK FOREST

The hope is strong that the Bull Creek and Dyerville forests can be purchased for a state or national park. But the purchase will have to be accomplished, largely at least, by public subscription and donations of money throughout the United States. And it will have to be done soon, for these redwoods, among the best stands left, are owned by large and active lumber corporations. It is the need for immediate attention that has br ought about the organization of the Save the Redwoods League (see pages 603 and 605).

John Muir said more than twenty years ago that large reservations of redwoods sho uld be made in Mendocino and Humboldt counties. The devastation by ax and fire since then has been unbelievably great. Fortunately, however, through the efforts of public-sp irited men we have been awakened at the beginning of 1920 instead of a few years hence when it would be too late. Now there are still remnants of forest worth saving

Courtesy of Mrs. Edward L. Ayer

IN THE EEL RIVER REDWOODS

No pictures, or words, can convey the attractiveness of the redwood forests. In combination with the majesty of size of the trees are many other features,—there are the fantastic forms of fallen tree trunk and upheaved root, the blending greens in ferns and mosses and tree foliage,—there are sunshine, the living air, the forest fragrance, the sound of wind in the branches,—and if the sea fog is shifting low among the trunks a fine mist falls upon the observer and veils everything in gray

made by the junction of the South Fork and the main Eel. Then in order northward along the coast, the Redwood Creek forest, the Klamath River groves, and, just south of the Oregon boundary, the Smith River groves (see map).

The report of the committee makes it evident that all these forests, or a major part of each, should ultimately be made state or national reservations—national parks or forest reserves. The Smith River tracts are picturesque with old, weirdly shaped trees, and have good camping sites and good fishing. The Redwood Creek stand is similarly picturesque and is especially tropical and fantastic in its luxuriant growths of moss and ferns. In both of these areas the trees are larger and older than elsewhere, less adapted for good timber, and more suitable for park purposes.

Choice for Immediate Reservation

The Survey would direct the first purchase for park purposes either to the Redwood Creek Forest, or to the more southerly Bull Creek and Dyerville stands, connecting with the groves along the South Fork of the Eel River, 20,000 to 25,000 acres altogether. Bull Creek is described as a magnificent stand of about 10,000 acres, belonging in largest part to the Pacific Lumber Company, and the Dyerville forest has about an equal acreage. The Dyerville stand is sharply bounded on the lower right bank of the Eel River by land as devastated as the battle fields of France,—an urgent demand upon the observer to save what remains from a similar desolation. On the lower left bank of the Eel, however, is one of the best stands examined, about 20,000 acres, belonging also to the Pacific Lumber Company and with the new State Highway traversing it,—although it also is bounded beyond by devastated territory. If the great expense of this 20,000-acre tract precludes its purchase in the reservation of Bull Creek, Dyerville, and the South Fork areas, the Survey recommends its addition to these forests at the earliest date possible.

The Money for Purchase

That all these redwood lands are under the ownership of lumber companies means that saving them from the ax will be done only so fast as money can be found for their purchase. The survey committee gives seven suggestions as to ways by which the money may be raised—outside of direct federal appropriation.

1. State taxation
2. County taxation
3. Local taxation
4. Public subscription
5. Donations of money
6. Donations of forest lands within the redwood area
7. Exchange where possible of state or federal forests for private forests within the desired area

Action of the state of California is certain to rescue one or more of the large tracts. That of Dyerville Flat, for instance, is especially threatened at present by the operations of the Pacific Lumber Company.

It cannot be said that the state of California has been wholly indifferent to its redwood forests heretofore. More than twenty years ago $250,000 was appropriated to buy redwood land near Santa Cruz which remains today a state park. On the other hand, the state must be blamed for the unfortunate work of its Highway Commission in failing to get a right of way wide enough to protect the scenic effects along the roadway. In the future the need for the coöperation of a landscape engineer will be understood; also, that the right of way should never average less than three hundred yards. The Commission even went so far in certain areas as to buy only a one-hundred-yard strip of land *with the proviso that the owners remove the timber!*

Anyone who has lived even briefly in California can understand the loyalty of Californians to their homeland—apart from the influence of the great friendliness of its people and its prominent commercial position. Surely they may well ask if there is any sunshine like that which falls on California's valley meadows, and over her warm foothill slopes, and through the mist-draped redwoods against the sky. These things have profound influence even if we are not conscious of it. The public sentiment of the whole state has now been aroused to the danger threatening its northern forests, and Governor Stephens, the Legislature, and the people may be trusted for the result.

Humboldt County Purchases 800 Acres along the State Highway

As to county action there is already, since the formation of the Redwoods League,

a definite story to be told. It is a story of activity on the part of the citizens of Humboldt County, coupled with personal generosity of two members of the League—as well as a spirit of coöperation which included members of the State Highway Commission and all the operating lumbermen. A matter of paramount importance was accomplished in early September when there was stopped all work of lumbermen directly bordering the highway under construction along the South Fork of the Eel River.[1] And now the deeds for the holdings are in the hands of the county. This gives immediate protection, for a part of the distance, to the narrow strip of the forest which contributes so much toward the beauty of the roadway—and also to its popularity through protection from sun and blowing dust.

County action has thus proved itself, and county and local money are certain to accomplish much, but cannot be expected to purchase the great tracts. The area occupied by the redwoods includes relatively small communities of people. It cannot be expected that the local population should carry the heaviest burdens of taxation.

Sonoma County had previously purchased one small grove of redwoods, the Armstrong Grove; and it is hoped that Mendocino County will buy the Montgomery Grove. This is situated just beyond Ukiah, on the west side of the State Highway, and if saved will, together with the town, form the motor tourist entrance to the northern redwood region.

Certain lumbermen among those owning the land have already made gifts to the state and others are certain to do so, but it is scarcely fair that they should be expected to be more generous than the rest of us. It speaks well for these men, who know the forests and their value, that they have already shown themselves willing to coöperate in a manner advantageous to the Government in any transfer of ownership. What the Redwoods League hopes for is not only gifts of redwoods from the owners in the proposed reservations, but, especially, gifts of redwoods owned, or purchased, in other areas, which can be exchanged for sections in the proposed reservations.

Let All the Nation Contribute

Public subscription and donations of money over the whole United States are among the most hopeful methods for saving the redwoods, and the quickest. But every means must be taken to spread a knowledge of the situation or it will not be possible to catch the thought and heart of the people in the complex condition of national and international affairs today.

All the people of the nation are concerned in the matter. So unique are the redwood forests and so especially fitted for recreational purposes that they should become possessions of all the people, looked upon with a sense of ownership by every American. As brought out in the report on the League's survey, in connection with the large expenditure necessary, "the resultant benefits from the area preserved will be measured in units more valuable than gold or silver—in health, in joy and pleasure from the recreational opportunities afforded, and in pride that we have saved these trees from the ax and the circular saw and that they belong to us and to our children forever."

As to direct federal appropriation, notwithstanding recognition of the need the process will prove a slow one in the present reconstruction period. Uncle Sam has usually designated national parks and forest reserves out of some part of the public domain; redwood conservation, unfortunately, is a case for purchase. Congressman Clarence F. Lea, of California, has presented a resolution to the House of Representatives calling for an investigation of the problem with reference to the establishment of a national redwoods park.

The following relative to federal action is quoted from a recent letter from Colonel Graves, chief of the United States Bureau of Forestry:

"I regard the movement as of very great importance and one which should be backed up by the entire nation. In many ways the redwoods represent the most remarkable forests in the world. They may not be quite as large as the giant trees of the Sierras but, growing as they do in dense continuous

[1]There have been many printed reports of the notable meeting held at Eureka, September 6. The small lumbermen who were operating along the Highway, cutting grape stakes and shingles, were brought together, and they agreed to suspend cutting for the sum of $60,000 and to give two-year options on their property. The county gave $30,000 toward the amount, Mr. Mather, $15,000, and Mr. William Kent, $15,000. Mr. Kent had previously proved himself interested in the relation of these trees to the public welfare by presenting to the nation the Muir Woods on Mount Tamalpais.

A MAY DAY IN THE SIERRAS AT 5500 FEET ELEVATION

Redwood groves in the low altitudes of the Coast Range are never made inaccessible by heavy snows

Photograph by George J. Reichel

THE DRIVEWAY PASSES THROUGH THE BIG TREE "WAWONA"

Big trees of Mariposa Grove, "Wawona" probably 3000 or 4000 years old, height 227 feet.

stands, there is impressiveness which to me makes them unique among all the forests that I have ever seen.

"This splendid undertaking is going to be possible only through combined action of the Government, the state, and the public at large. As to the contribution of the Federal Government, it is very likely to be delayed and to come as aid to a project in which the state and the citizens of the nation are already liberally contributing."

What will appeal to the country as the thing to do in the necessity of the case is that we, each and all, shall purchase these forests as fast as we can, *for our own,* with money subscribed in small or large amounts; then, that we shall present them to Uncle Sam so that they may remain forever under his protection. This will be a definite recognition of the unitedness of government and people in America, and of the interest and generosity Uncle Sam has always accorded the people in the matter of the country's natural resources.

I am including in this article only photographs of the northern redwoods unmolested by lumbering (with the one exception, page 599). The frightful destruction continues.[1] It is not to be wondered at that the people of the northern coast area who see it going on about them and realize that their prosperity, their very existence commercially, depends on the maintenance of these forests, have awakened to the waste.

But the point is, the country is now awakened, after the many hundreds of thousands of acres are gone, and it is still not too late to save the tens of thousands of acres left. There is now, besides, a definite organization in the Save the Redwoods League to represent the people of the country and to handle money or gifts of land to the best advantage.

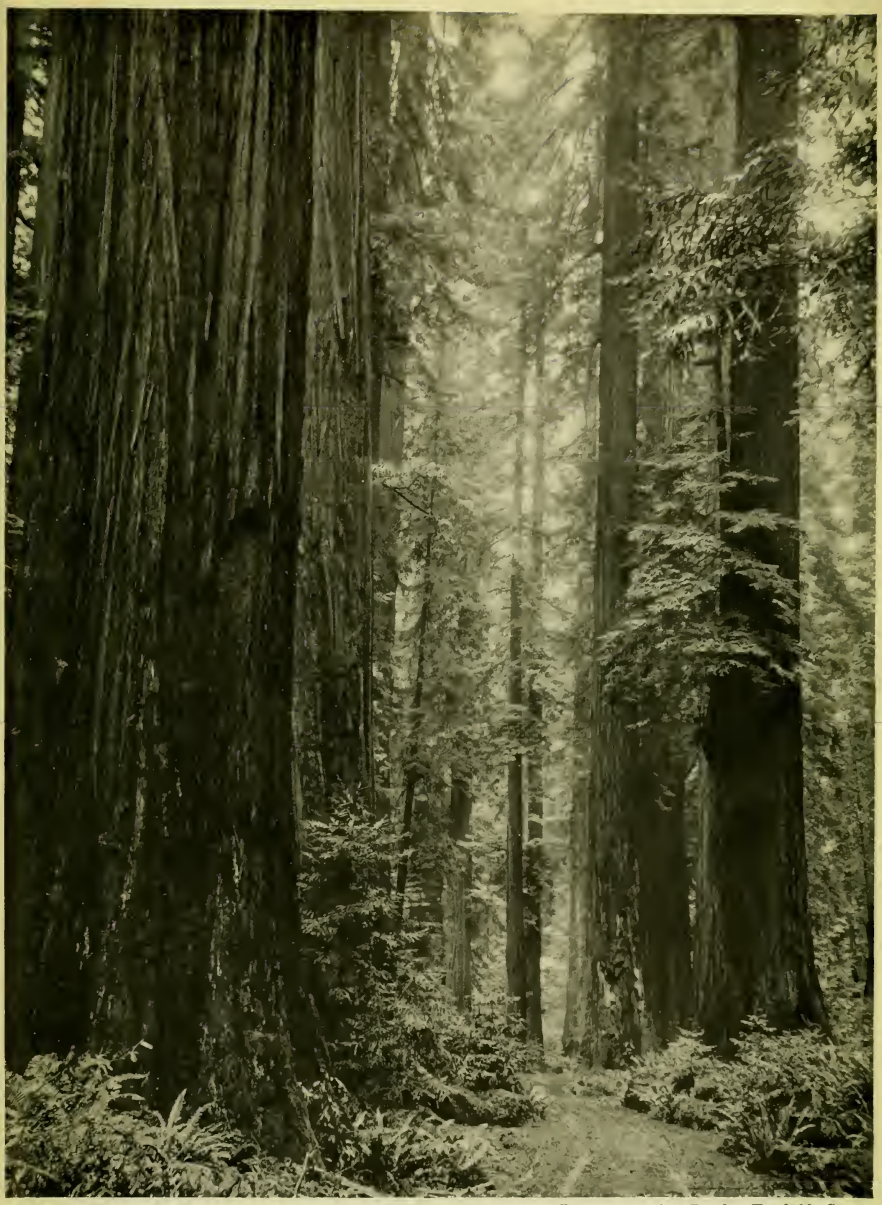
I would put emphasis, therefore, not so much on what is lost, as on what can be saved. There are parts of the northwestern highways where for miles the road is narrowed and blocked with piled grape stakes and shingles, and on either hand the ground is covered with a jumble of treetops, branches, slabs, and bark, which should have gone to the manufacture of some by-product. But also there are stretches where the roadway leads from open sunshine and distant views of green, wooded mountain slopes into the giant forest and on through colonnades of trees where the air is cool and fragrant and long beams of sunlight slant down through the green of redwood foliage.

Nor would I direct the gaze to the miles of desolate country where everything has been leveled and only charred stumps of giant trees mark the site of the forests destroyed. Instead I would bring to the imagination the acres of forests still uncut and the potential joy for Americans of today and tomorrow in their possession.

The war has made the surface of the earth seem smaller and all the lands nearer and the peoples nearer. If France and England and Belgium and Italy seem not far away from America today, how very close to all other parts of the United States is California! To go to the western coast, to tour through these northern forests is no longer the impossible dream for the many. It will be realized by tens of thousands of people in 1920.

The redwoods are not only the "glory of the Coast Range" and the pride of Californians, they are the pride and satisfaction of all Americans. Good luck will surely attend us if we save our Sequoia woodlands.

[1] See many full page illustrations in Mr. Grant's article, *Zoological Society Bulletin,* September, 1919.



Freeman Art Co., Eureka, Humboldt County

CATHEDRAL AISLES—IN HUMBOLDT COUNTY, CALIFORNIA

The sunshine penetrates the roof of green far above and illumines the aisles between the giant pillars, imparting an effect of architectural grandeur. Redwood forests are the planet's vast cathedrals for the spirit of worship of its people. Somehow—American money will dedicate these forest cathedrals to the American people